25 Cents

THE LUMBERMAN

60th Year

January 1950

Vol. 77 • No. 1

Sawmill Engineering Issue

SEATTLE-PORTLAND
SAN FRANCISCO-NEW ORLEANS
VANCOUVER, B.C.-NEW YORK
CHICAGO-LOS ANGELES

Editorial Index page 51

The Production Journal of the Forest Industries

ALL FOR ONE!

There's no letup for logging equipment. It looms large in the building of an even more productive America—all industry's goal. As much as ever, therefore, you need the firm grip on wire rope operations that *Preformed* Yellow Strand provides. Let its stout steel wires handle your heavy hauling, skidding and loading jobs. Use its limberness to increase efficiency of road-building machines, sawmill carriages and cranes. The long-lasting line is the *economical* line. Specify *Preformed* Yellow Strand by name.

Broderick & Bascom Rope Co.
St. Louis

Factories: SEATTLE, St. Louis, Peoria, Houston
Branches: SEATTLE, Portland, Los Angeles, New York, Chicago, Houston

Distributors in All Logging Areas

BRODERICK & BASCOM
Yellow Strand
PREFORMED WIRE ROPE

Lift it with your little finger!

McCULLOCH 3-25

HORSEPOWER POUNDS

Incredible! You'll say so yourself when you first lift a McCulloch 3-25 *one-man* chain saw. You'll be even more surprised when you saw with it. How that little yellow fellow can cut!

Light and Fast Cutting Judging by the way the McCulloch 3-25 cuts, you'd think it should weigh 40 to 50 lbs. The fact that it doesn't—that it weighs only 25 lbs.—is a tribute to McCulloch engineering.

THERE'S A McCULLOCH FOR EVERY TIMBER-CUTTING JOB

20" Model 5-49 . . . $385
30" Model 5-49 . . . $395
40" Model 5-49 . . . $405
50" Model 5-49 . . . $415

18" Model 3-25 . . . $295
24" Model 3-25 . . . $305
30" Model 3-25 . . . $315

60" Model 5-49 . . . $425

20" 5-49 Bow Saw . . . $425

15" 3-25 Bow Saw . . . $325

All prices f.o.b. Los Angeles

3-25 HAS EVERY FEATURE

★ 3 hp. ★ 25 lbs. weight, complete with 18" blade and chain ★ Automatic clutch ★ Built-in chain oiler ★ Full-power sawing at any angle ★ Kickproof rewind starter ★ Easily accessible ignition points ★ One-hand controls

NATIONWIDE SALES AND SERVICE

SEND FOR FREE LITERATURE AND NAME OF NEAREST DEALER

McCULLOCH MOTORS Corporation

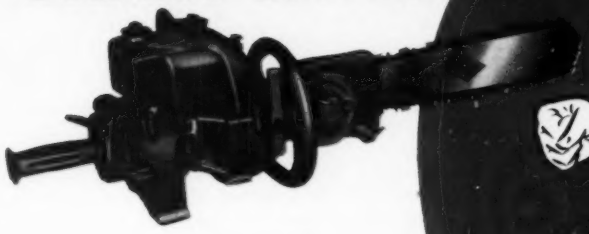
6101 West Century Blvd., Los Angeles 45, Calif.

TITAN

BLUESTREAK

CHAIN SAWS

"LARGE OR SMALL WE CUT 'EM ALL"



TITAN JUNIOR

5 h.p. ONE-Man Chain Saw
Weight Under 30 Pounds
Fully Automatic
Complete Bar Swivel Device

*18 inch unit	$287.50
*26 inch unit	$293.50
*32 inch unit	$299.50

(*actual cutting length)

TITAN AUTOMATIC BLUESTREAK

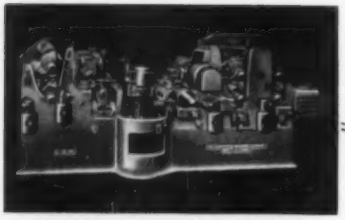
12 h.p. Power Unit weighs 60 pounds.
Fully Automatic Clutch—No Vibration.
Equipped with Famous BLUESTREAK Bar and Chains, available 2 feet to 12 feet.

PRICED FROM $539.65

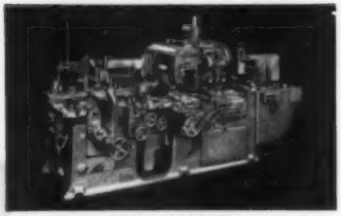
Nationwide Titan authorized sales and service. Write for the name of the Titan dealer nearest you.

TITAN CHAIN SAWS, INC.
SEATTLE 4, WASHINGTON

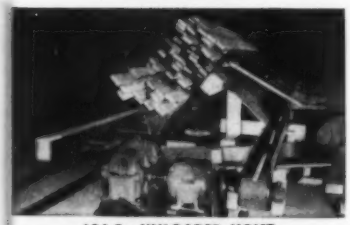
The Lumberman is published monthly at 71 Columbia St., Seattle, Wash. Annual subscription, $2.00; Foreign, $3.00; News-stands, 25c. Entered as second class matter April 1, 1935, at the Post Office at Seattle, under the Act of March 3, 1879.



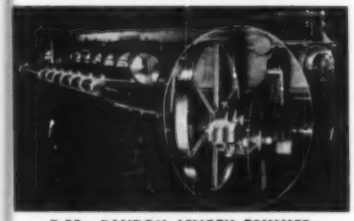
6-10-A1 PLANER AND MATCHER



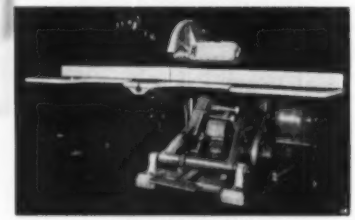
48K1 MOULDER



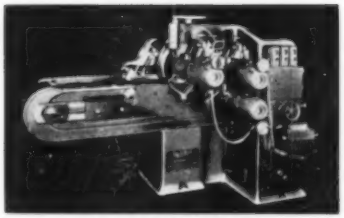
604-E UNLOADER HOIST



T-30 RANDOM LENGTH TRIMMER



T-18 CUTOFF SAW



36-A END MATCHER

1920 MACHINES WERE FINE ...IN THE 1920's

BUT THIS IS 1950 — with faster automobiles, streamlined trains, jet planes, and stepped-up production in every industry. The manufacturer who expects to get his share of today's profits knows he can't do it with 30-year-old methods and machinery. Today the yearly national income is $220 billion. In 1920 it was less than $70 billion. The physical volume of goods produced has also more than doubled during this same period. In the lumber business, the mills that have had the courage to tool their plants in pace with our expanding national economy are doing a lot of business and making substantial profits.

REDUCE COSTS with STETSON-ROSS

On the other hand, the mills that are geared to 1920 methods find themselves priced out of the market with every fluctuation in lumber prices. The answer is elementary — *you must produce more feet of lumber per man-hour now than formerly to show a profit. This requires mechanization and efficient plant layout.*

Have you figured out how much finished lumber your planing mill produces per man-hour? How does your tally compare with competitive mills in your locality and in other lumber-producing areas?

Nationwide surveys predict that there will be several years of steady demand for quality lumber—a fine opportunity to modernize your planing mill and pay for it from current earnings. And, as a first step in retooling for a profitable future, you are invited to consult Stetson-Ross Machine Company—pacemakers in the manufacture of planing mill machines for over 40 years.

There is a representative in your area. Information gladly given.

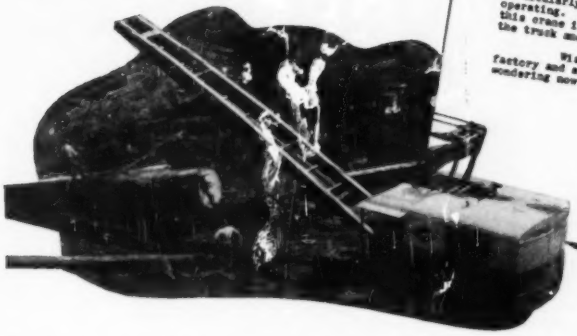
STETSON-ROSS MACHINE COMPANY
SEATTLE 4, WASHINGTON

EXPORT DIVISION: 301 CLAY STREET, SAN FRANCISCO, CALIFORNIA

"We wonder how we ever got along without it"

LIMA

TYPE 802 LOG LOADER



HAMMOND LUMBER COMPANY

PORTLAND, OREGON

November 5th 1947

Fenaughty Machinery Co.,
112 S. E. Belmont St.,
Portland 14, Oregon

Attention Mr. Dale Harwood

Dear Sirs:

With regard to the Lima Model 802 power shovel which we purchased from you in October of 1947;

We are quite pleased to advise you that this machine is doing everything that we had hoped and planned for it. In fact, it is one of the greatest pieces of logging equipment we have on the job. We have used it continuously this past year loading out from the cat sides for the most part, but have used it also in a case or two where we were using high leads.

The remarkable thing in connection with this shovel loader is that the crew are all sold on it and the loaders particularly wish to work on the side where the crane is operating. This also applies to the truck drivers since this crane is so convenient for unloading the trailer from the truck and is fast in putting a load on the truck.

Wish to state again that this crane is very satisfactory and after using it these past few months we are wondering now how we ever got along without it.

Yours very truly,
HAMMOND LUMBER COMPANY
B. C. Patton

● This Lima machine was purchased by Hammond in fall of 1947. During the wet season it was used for re-logging, cleaning up logged-over areas. In July it moved into a 4,000-acre burned area, and was largely responsible for making this salvage operation profitable. With it, 52 truck-loads of logs, averaging 5,000 feet, were loaded out in one 8-hour day! "Our only mistake," says Mr. Patton, Northwest Manager for Hammond Lumber Co., "was that we did not get it sooner."

Letters like the above show why LIMA's are favorites in the Lumber field. They are designed and built for hard usage, and have that extra margin of stamina which enables them to stay on the job day after day. The LIMA line includes Shovels from ¾ to 6 yards, Cranes from 13 to 110 tons, and draglines variable.

LIMA EQUIPMENT SOLD AND SERVICED BY:

OUR SEATTLE OFFICE: 1932 First Avenue South, Seattle 4, Wash.

Sales Agents:

FEENAUGHTY MACHINERY CO.
112 S. E. Belmont Street
Portland 14, Oregon

MODERN MACHINERY CO., Inc.
4412 Trent Avenue
Spokane 2, Washington

JAMESON ENGINEERING SALES
Fairbanks, Alaska

Lima Shovel and Crane Division

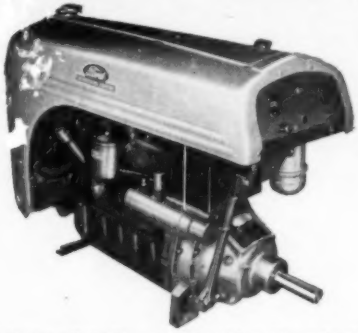
LIMA, OHIO

LIMA HAMILTON CORPORATION

OTHER DIVISIONS: *Lima Locomotive Works Division; Niles Tool Works Co.; Hooven, Owens, Rentschler Co.*

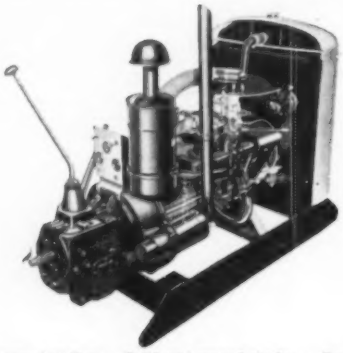
IT'S HERE...

NEW Ford "120" POWER UNIT



Removable dry cylinder liners . . . 3-ring pistons, chrome top ring . . . Moly-chrome valve seat inserts . . . Circulating cooling system with thermostat . . . Replaceable thin shell main and connecting rod bearings . . . Counterbalanced crankshaft . . . Magneto or battery ignition . . . Oil filter . . . Heavy duty oil bath air cleaner.

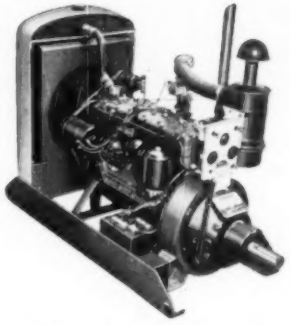
NEW Ford "226" POWER UNIT



Pad mounted oil filter . . . Full length water jacketing . . . Recirculating pressure cooling system with thermostat . . . Counterbalanced crankshaft . . . Heavy duty, replaceable thin shell copper lead bearings . . . High lift camshaft . . . Balanced carburetion (downdraft or updraft) . . . Heavy duty oil bath air cleaner.

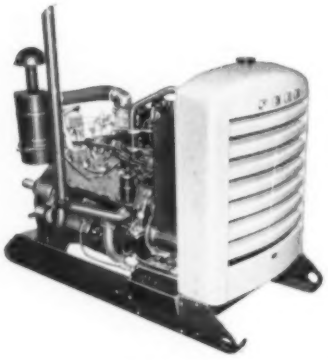
Complete

NEW Ford "254" POWER UNIT



Pad mounted oil filter . . . Recirculating pressure cooling system with thermostat . . . Autothermic pistons with chrome top compression ring . . . High lift camshaft . . . Hard faced cobalt exhaust valve (free type valves) . . . Counterbalanced crankshaft . . . Heavy duty, replaceable thin shell copper lead bearings . . . Balanced carburetion (downdraft or updraft) . . . Air cleaner.

NEW Ford "239" POWER UNIT



Dual water pumps . . . Full length water jacketing *plus* . . . Recirculating pressure cooling system with thermostat . . . Fully counterbalanced crankshaft . . . Replaceable thin shell bearings . . . Moly-chrome valve seat inserts . . . Dual downdraft carburetion . . . Oil filter and air cleaner.

RIGHT for Centrifugal Pumps . . . Arc Welders . . . Air Compressors . . . Cranes and Hoists . . . Winches . . . Railway Cars . . . Generator Sets . . . Crane Loaders . . . Feed Grinders . . . Mechanical Shovels . . . Portable Sawmills . . . Portable Well Drillers . . . Farm Combines . . . Street Flushers . . . Concrete Mixers . . . Portable Grain Mills . . . Irrigation Equipment . . . Log Yarders and Loaders—and many other applications.

Specifications of Ford Industrial Engine Power Units

Model	Cylinders	Bore and Stroke	Displ. cu. in.	Dyn. B.H.P.	Max. Torque	Equipment Available
120	4	3⅛ x 3¼	120	38 @ 2400	92#' @ 1600	Clutch; SAE #5 housing; power take-off; Ford housing; 3- or 4-speed transmission; governor. (Available as closed type power unit or engine assembly.)
226	6	3.3 x 4.4	226	80 @ 2400	182#' @ 1200	Clutch; SAE #3 or #4 housing; power take-off; Ford housing; 3-, 4- or 5-speed transmission; governor. (Available as closed or open type power unit, or engine assembly.)
239	V-8	3⅛ x 3¼	239	85 @ 2400	187#' @ 1600	Clutch; SAE #3 or #4 housing; power take-off; Ford housing with 3-, 4- or 5-speed transmission; governor. (Available as closed or open type power unit, or engine assembly.)
254	6	3.5 x 4.4	254	95 @ 2400	212#' @ 1200	Clutch; SAE #3 or #4 housing; power take-off; Ford housing; 3-, 4- or 5-speed transmission; governor. (Available as closed or open type power unit, or engine assembly.)
337	V-8	3½ x 4⅜	337	117 @ 2400	257#' @ 1600	Clutch, 5-speed direct-in-fifth transmission, overdrive transmission, direct drive power take-off. (Available as closed or open type power unit, or engine assembly.)

FORD

Industrial Engine Power Units ARE RIGHT 3 WAYS for your job!

1. **RIGHT POWER**—five great models in wide variety of units. Each one ready to run!
2. **RIGHT FEATURES**—all the latest advancements of Ford's famed progressive engineering.
3. **RIGHT SERVICE**—as near as your nearest Ford Dealer, clear around the world.

Line of NEW Ford INDUSTRIAL ENGINE POWER UNITS!

NEW Ford "337" POWER UNIT

Drop forged fully counterbalanced crankshaft, hardened journals . . . Heavy duty, replaceable thin shell copper lead bearings . . . Hard faced cobalt exhaust valves (free type valves) . . . Autothermic pistons, chrome top ring . . . Dual centrifugal water pumps . . . Full length water jackets . . . Recirculating pressure cooling system with thermostat . . . Dual downdraft carburetion . . . Oil filter and air cleaner.

YOUR JOB IS WELL-POWERED WHEN IT'S FORD-POWERED

● Ford Industrial Power Units are now available in five great models . . . four, six and V-type eight cylinder . . . 120 to 337 cu. in. displacement. *COMPLETE* with radiator . . . instrument panel and S.A.E. or Ford type housings. Foot or skid mounted. Closed and open types. Made throughout to Ford's famed hi-precision manufacturing standards. Completely tested and *READY TO RUN!*

Ford Dealers, Ford District Sales Offices and the Ford Industrial Engine Department are at your service in developing engineering recommendations showing how Ford Industrial Power Units can be most effectively applied to your job. *Mail coupon below for Ford Industrial Power Unit Folder.*

For Special Literature on Ford Industrial Power Units, use this coupon . . .

Send me comprehensive literature about the new Ford Industrial Power Units. Address: **Industrial Engine Dept., Ford Motor Co., Dearborn, Mich.**

NAME _____ *(Please print)*

STREET _____

CITY _____ STATE _____

Industrial Engine Department

FORD MOTOR COMPANY

DEARBORN, MICHIGAN

Out Ahead Again FOR 1950!

New "Weight-Saving" Diesel Tractors • New Middle-Weight Six-Wheelers
New Power and New Features in Light and Medium Duty Models

Once again GMC leads the truck transport parade . . . once again GMC introduces improvements in design and function . . . once again GMC widens the scope of truck performance and truck usefulness.

For 1950 there's a new heavy duty 2½-ton "470" series . . . two new "400" and "620" series six-wheelers . . . two new "weight-saving" Diesel-powered tractors built to handle maximum legal payloads in the 45,000-55,000 pound weight range . . . a new 1½-ton "280" series of 11,000 pounds GVW.

These new models combine to offer GMC power, dependability and economy to many more operators . . . and all along the line GMC's move even further out in front. New camshafts, valves and manifolds step up the power in light-medium models. Wider seats, more headroom and improved sealing increase their cab comfort. And there are new chassis features, including new hydraulic and optional air brakes on 2½-ton models, new front springs with airplane-type shock absorbers on light trucks. Your nearest GMC dealer has complete facts. See him soon.

Logging and lumber men will find a model ideally suited to their hauling needs in the GMC line which ranges from 4,600 pounds GVW to more than 90,000 pounds GCW. The two new six-wheelers, for example, which combine great tractive ability with low GVW ratings of 24,000 and 32,000 pounds, are especially well adapted to off-the-road jobs.

GMC
GASOLINE • DIESEL
TRUCKS

GMC TRUCK & COACH DIVISION • GENERAL MOTORS CORPORATION

ROADS TODAY...

LOGS TOMORROW

WITH A LORAIN

Potlatch Forests, Inc., Lewiston, Idaho, have the mobility in their Lorain TL-Moto Shovel to dig a bridge abutment in the morning — load crushed rock for resurfacing haul roads at noon — and be loading logs many miles away by evening! Potlatch's Moto-Crane is a model 6 x 6 which applies heavy-duty power and tractive effort to all 6 wheels for tough terrain and steep grades — provides a 30 M.P.H. top highway speed which lets them "deal" from several decks at multiple landings in selective logging shows. This versatile, woods-proven machine can handle any kind of excavating or material-handling job — at the switch of a boom it becomes a crane, clamshell, hoe or logloader. Get *all* the story on Lorains *now*. See your local Thew-Lorain Distributor — promptly.

THE THEW SHOVEL CO., LORAIN, OHIO

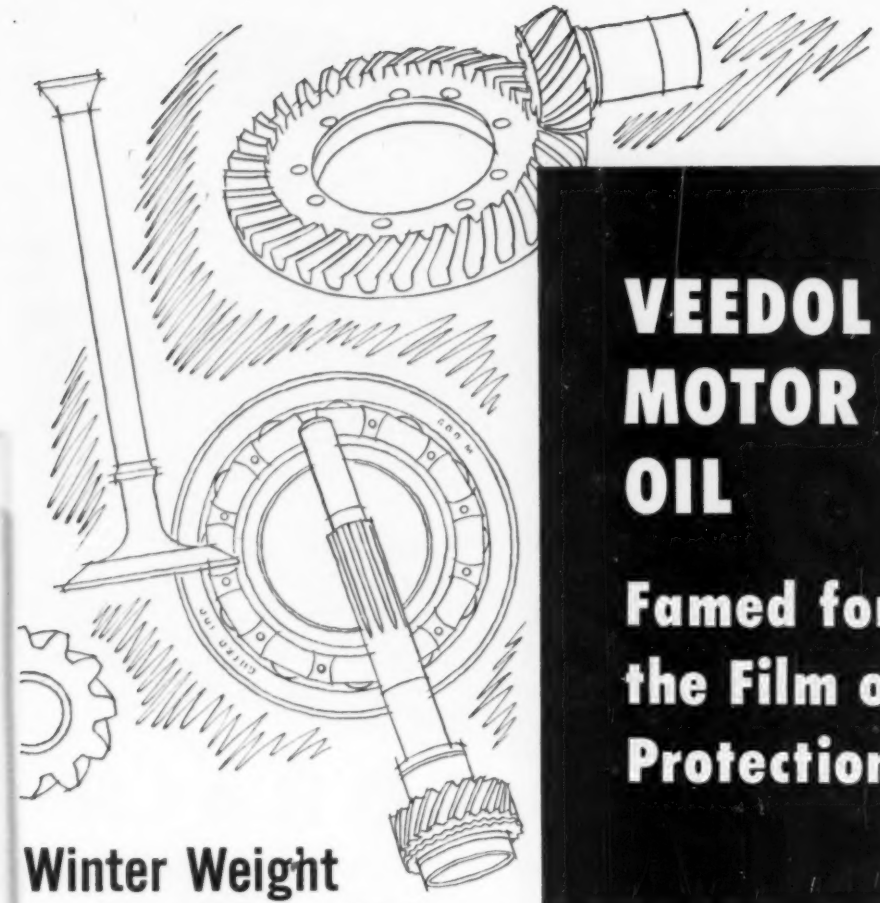
YOUR LOCAL THEW-LORAIN DISTRIBUTOR IS LISTED HERE

Andrews Equipment Service of Washington, Inc., Spokane, Wash.
Bunting Tractor Co., Boise, Idaho, also at Twin Falls, Good.ng, Fairfield and Burley, Idaho.
Central Machinery Co., Great Falls, Mont.
Coast Equipment Co., San Francisco, California.
A. H. Cox & Co., Seattle, Wash.
P. L. Crooks & Co., Portland, Ore.
Inland Machinery Company, La Grande, Oregon.
The Mountain Tractor Co., Missoula, Montana.
Southern Idaho Equip. Co., Idaho Falls, Idaho.
Tractor & Equipment Co., Sidney, Miles City and Glasgow, Mont.
Vancouver Machinery Depot, Ltd., Vancouver, B. C., Canada.
Wortham Machinery Co., Cheyenne, Wyoming and Billings, Mont.

160 LORAIN COMBINATIONS
3 Turntable Series
5 Interchangeable Booms
3 Basic Types of Mountings
Give you the choice of 160 practical Lorain Combinations, to fit your Log-Loading, Material-Handling, Excavating needs EXACTLY!

THEW · Lorain ®
LOG LOADERS
Crawler & Rubber Tire

MORE FOR YOUR MONEY IN A LORAIN



VEEDOL MOTOR OIL

Famed for the Film of Protection

Winter Weight for Winter Wear

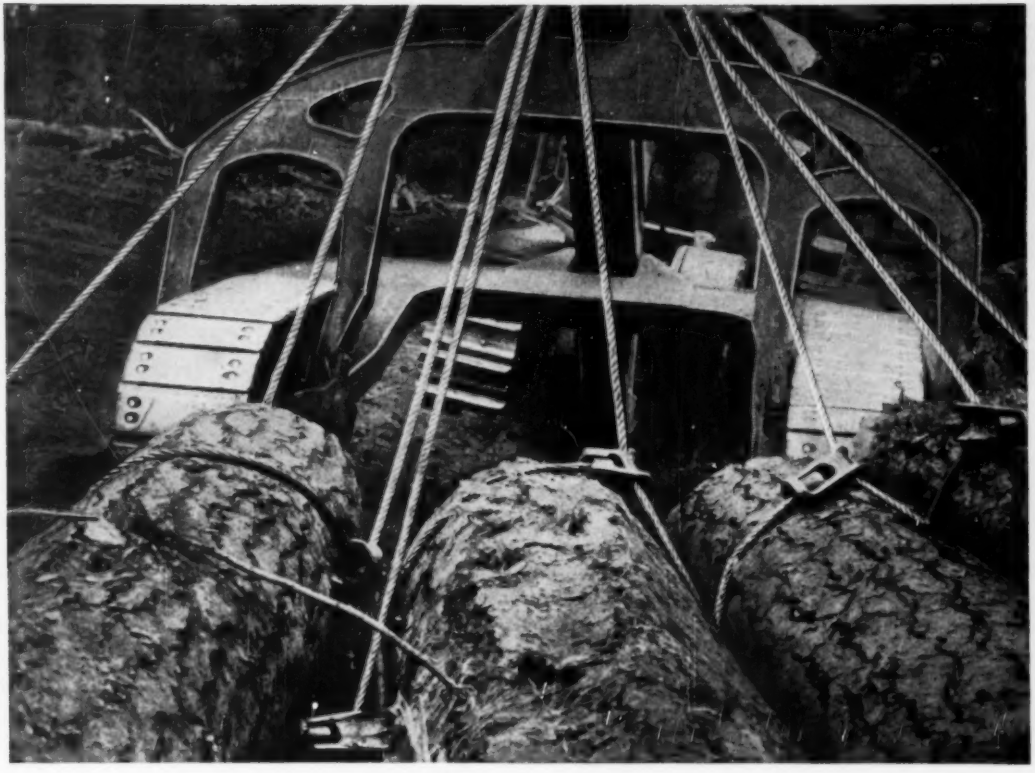
Cold weather makes it tough on automoble engines. So you have to use a motor oil that more than matches winter's toughness. Low pour-point Veedol 10W and 20W provides the answer. Veedol is also available in SAE Grades from 10 to 70. Faster cold weather starting, quicker warm-up and real protection for bearings, pistons and cylinder walls make Veedol an all time *must*.

Veedol is made from 100% pure Pennsylvania base stocks and is additive treated for extra premium quality. To give your engine longer life, smoother running, full protection all the way, use Veedol Motor Oil.

Call your Associated Representative for expert help on any lubrication problem

TIDE WATER ASSOCIATED OIL COMPANY

a better Choker



LOGGERS HELPED ROEBLING MAKE IT!

Fortunately, we're receptive to things like that. Even though we have been making wire ropes since 1841, if Loggers—or anybody else that uses wire rope—want to help us improve it, we're not only glad to listen—we'll do it.

☆ ☆ ☆

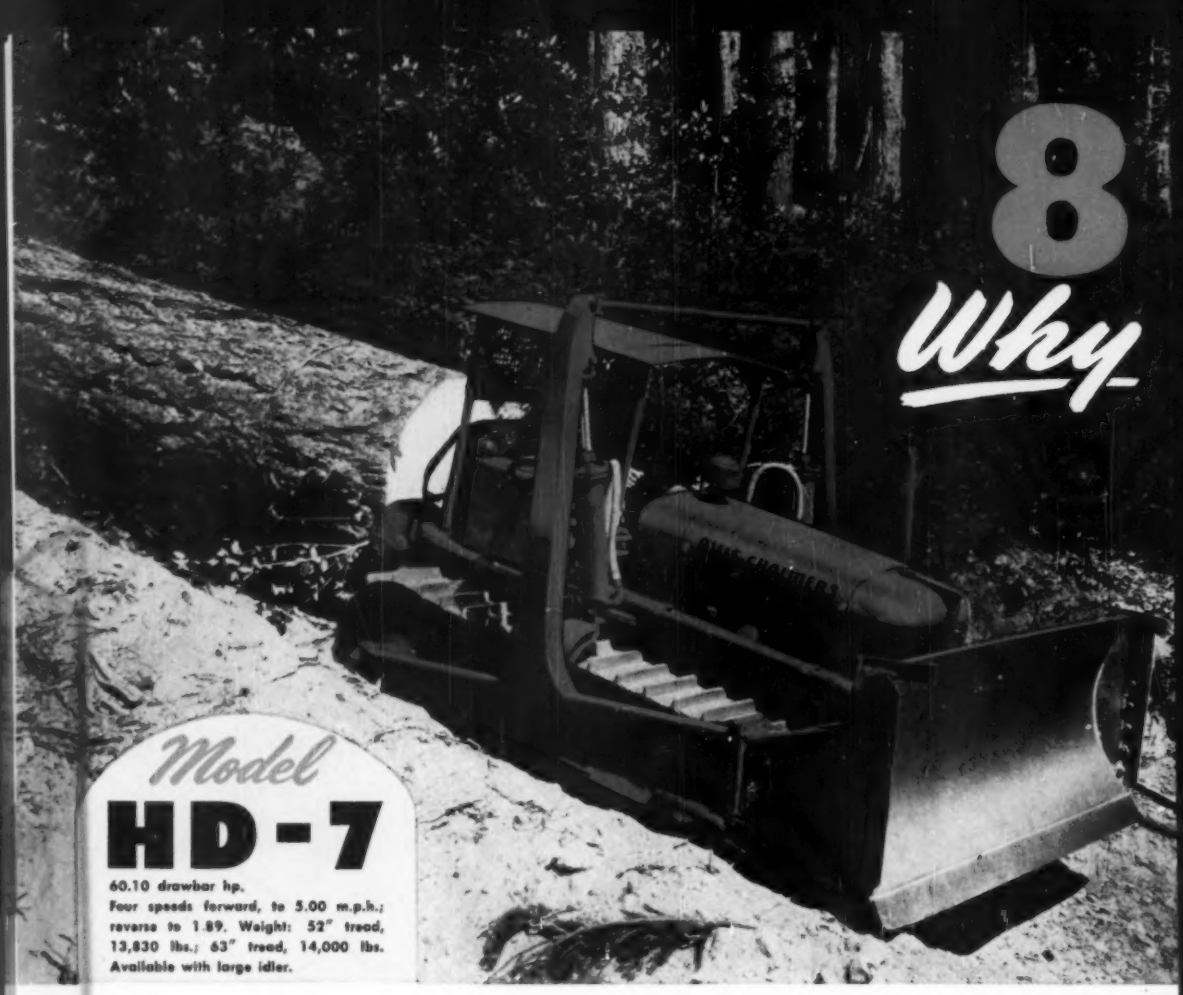
Pacific Coast Loggers and Roebling Engineers got together in the woods to see if they couldn't develop greater efficiency in the wire ropes used for logging. These experiments served to provide the vital information on which the specifications for the manufacture of Roebling's #2 Special Choker Rope are now based.

Continuous log production demands a choker that can stand up under the rough going—one that's *built* to resist the abusive conditions imposed by this service. Ask a Roebling Field Man about the #2 Special Choker—made of "Blue Center" Steel, Preformed with I.W.R.C. . . . Your best bet for a choker rope that's longer-lasting, easier to handle, more economical.

JOHN A. ROEBLING'S SONS CO.
OF CALIFORNIA
San Francisco · Los Angeles · Seattle · Portland

JAR ROEBLING

ROEBLING
A CENTURY OF CONFIDENCE


8
Why-
Model
HD-7
60.10 drawbar hp.
Four speeds forward, to 5.00 m.p.h.; reverse to 1.89. Weight: 52" tread, 13,830 lbs.; 63" tread, 14,000 lbs.
Available with large idler.

Let the Outstanding Advantages of These AHEAD-OF-THE-TIME Tractors Boost Your Production and Cut Your Costs...as They Have for Thousands of Owners

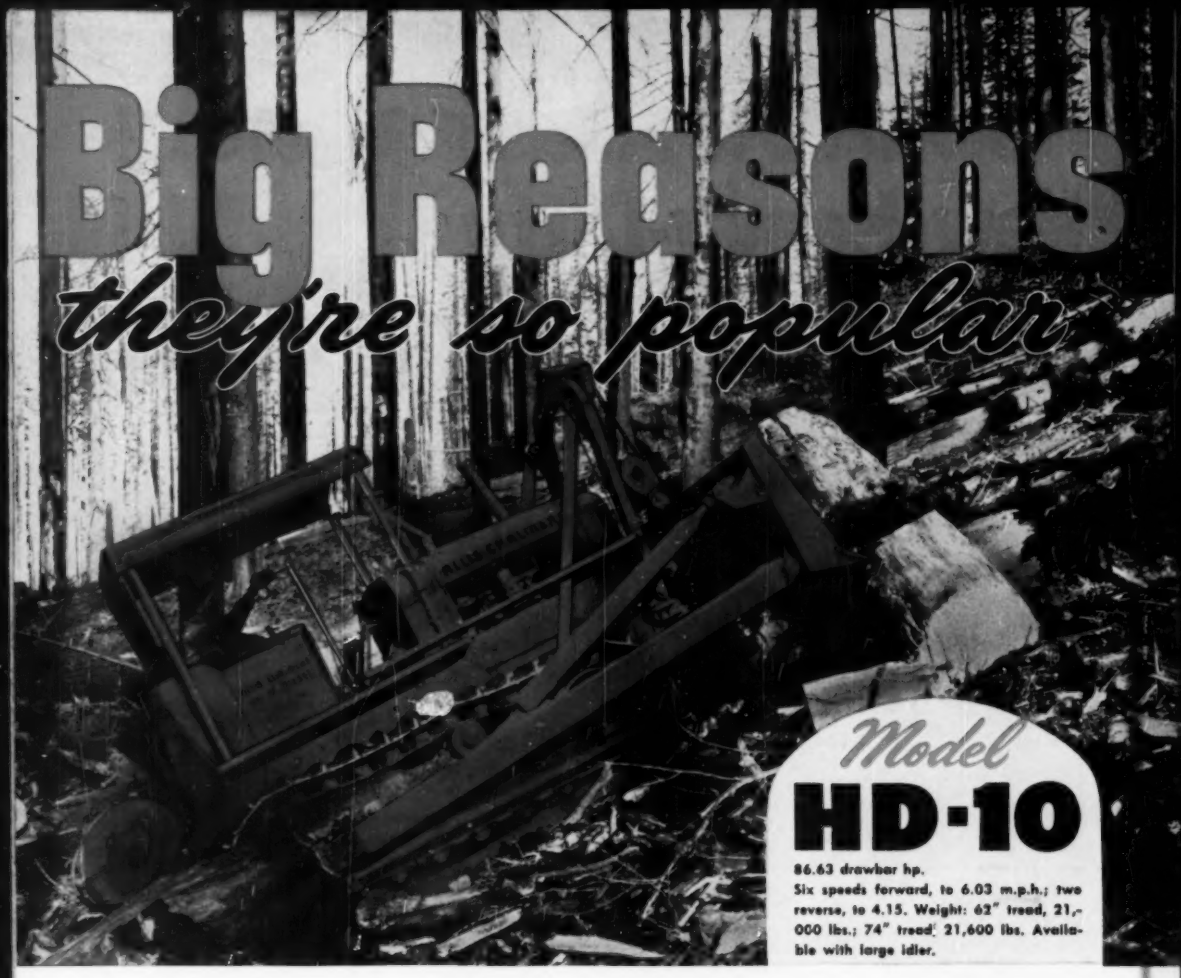
1 **1,000-HOUR LUBRICATION** of truck wheels, support rollers and idlers. You operate six months on a 40-hour week basis with just *one lubrication* . . . instead of daily, or even weekly, attention. Think what this means in labor and lubricant savings . . . and in working time gained! Think of the safety factor, too—no costly damage by greasing neglect.

2 **GENERAL MOTORS 2-CYCLE DIESEL ENGINE** Rugged, simple, economical, "hanging-on" power. Smooth — every down stroke a power stroke . . . less wear and tear on tractor and operator. Far less power loss than other engines at high altitudes.

3 **INTERCHANGEABLE ENGINE PARTS** Nearly all of the GM engine wearing parts are interchangeable with each of the GM engines on the various models of A-C tractors and motor graders—no matter the size. Lowers parts investment, simplifies maintenance for Allis-Chalmers fleet owners.

4 **INSTANT STARTING** GM 2-cycle diesel engines start as easily as your automobile . . . and they *start* and *operate* on *diesel fuel*. No need to let 'em idle during work-stop periods — no unnecessary engine wear or fuel waste.

Ask any owner...or arrange for a demonstration with your Allis-Chalmers dealer ..."SEEING IS BELIEVING"


Big Reasons
they're so popular
Model
HD-10
86.63 drawbar hp.
Six speeds forward, to 6.03 m.p.h.; two reverse, to 4.15. Weight: 62" tread, 21,000 lbs.; 74" tread, 21,600 lbs. Available with large idler.

5 **FAST MANEUVERING** 2-cycle diesel tractors are well known for their fast-working ability — not only for quickly traveling from cut to fill, but for turning around instantly in their tracks . . . and for easy maneuvering in and around tight places — especially important on bulldozing. Time saved is money made!

6 **PROPER BALANCE** Weight, speed and power are positively balanced in A-C tractors, assuring top performance on every job — pulling, pushing, lifting.

7 **OPERATOR COMFORT** All these advantages mean operator satisfaction, too — resulting in more work done more easily. Besides — he has a big, wide, comfortable seat, cushioned back, arm rests, roomy platform, convenient controls, good vision.

8 **MATCHED ALLIED EQUIPMENT** Each Allied manufacturer, skilled in his own field, works in complete cooperation with Allis-Chalmers in designing and building auxiliary equipment.

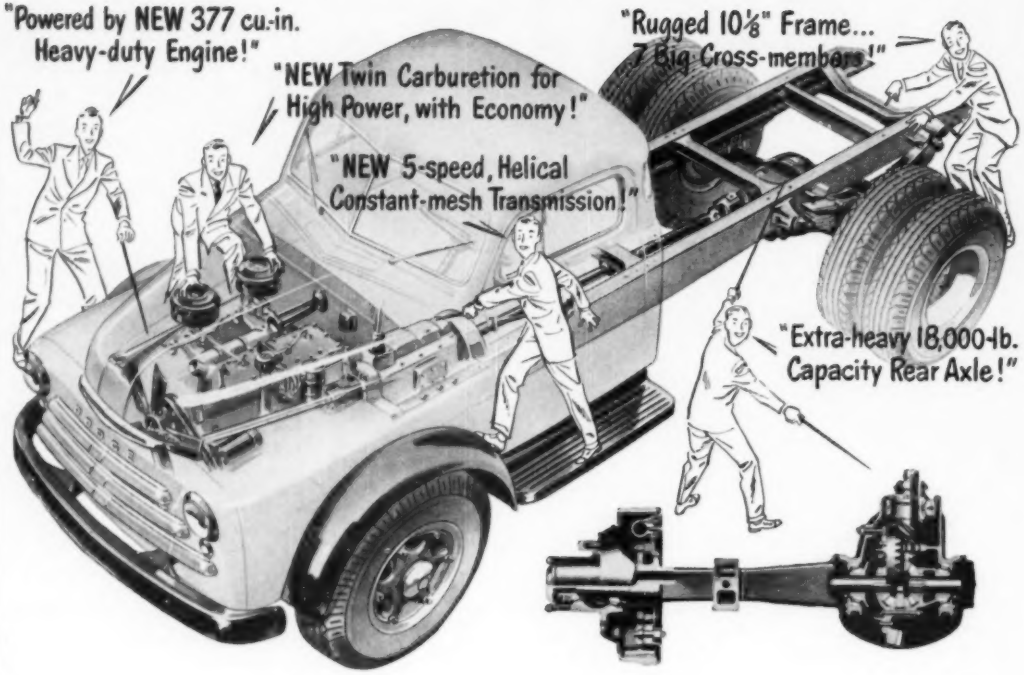
ALLIS-CHALMERS

TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

Originator of the Torque Converter Tractor

BIG NEWS for haulers of BIG LOADS!

New Heavy-Duty 4-TON DODGE "Job-Rated" TRUCKS


"Powered by NEW 377 cu.-in. Heavy-duty Engine!"
"NEW Twin Carburetion for High Power, with Economy!"
"NEW 5-speed, Helical Constant-mesh Transmission!"
"Rugged 10⅛" Frame... 7 Big Cross-members!"
"Extra-heavy 18,000-lb. Capacity Rear Axle!"

There's a *new* champion in the HEAVY-DUTY truck field. It's the new Dodge truck rated at 28,000 pounds G.V.W. . . . 50,000 pounds G.C.W.!

Ample "*Job-Rated*" POWER flows from one of the finest-performing, and most economical truck engines ever designed. It develops 154 gross horsepower, and 330 pound-feet gross torque.

This remarkable engine contains such advanced long-life features as Silchrome intake valves and inserts. Exhaust valves are Stellite-faced and sodium-filled to resist warping, wear longer.

Hydraulic lifters insure perfect valve operation. Rustproof water distributor tube provides maximum valve seat cooling, and lengthens engine life. High power output and economy result from two downdraft carburetors. Features are numerous: Dual intake manifold; dual exhaust system; high anti-vapor-lock pump; ceramic fuel filters; velocity-type governors; oil-bath air cleaners, and many others.

This "*Job-Rated*" load lugger has a new and rugged constant-mesh, 5-speed helical transmission, direct-in-fifth, with an extremely high torque input. A 5-speed overdrive transmission is available.

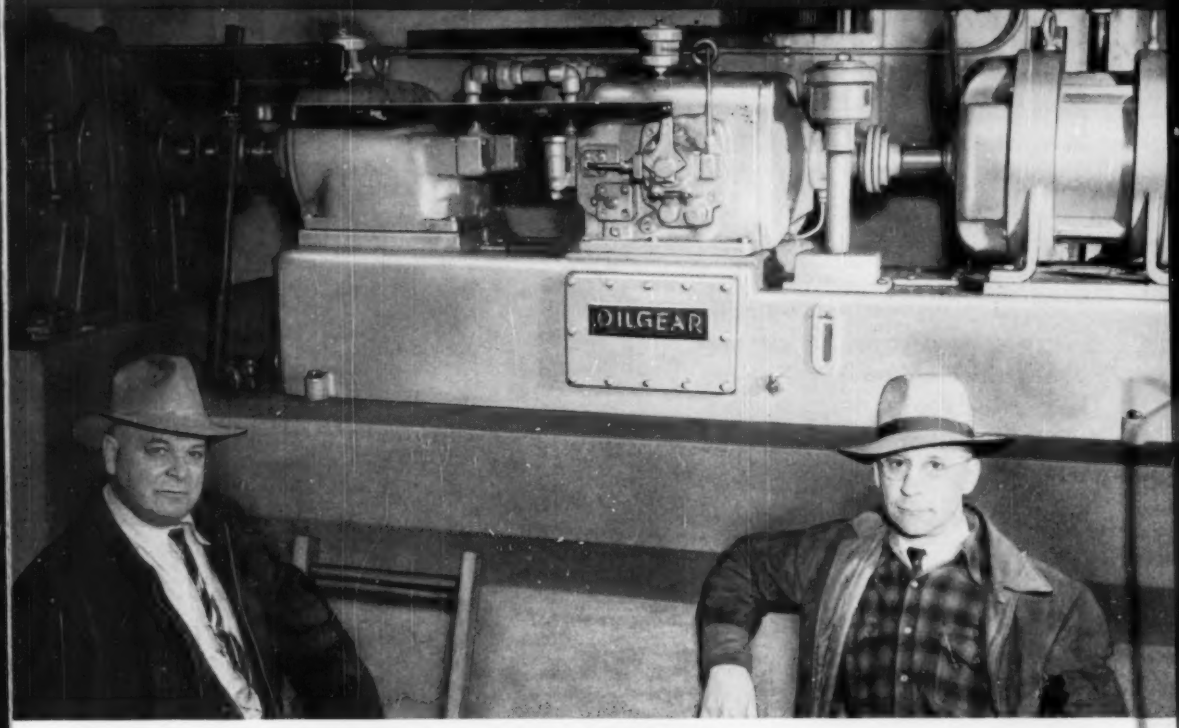
This 4-tonner has a rugged 10⅛-inch frame, with 7 and 8 big crossmembers; extra-heavy 18,000- and 22,000-pound capacity rear axles, and many other HEAVY-DUTY features you'll want to study and compare.

If your transportation requirements fall in the 28,000-pound G.V.W. range (up to 50,000 pounds G.C.W.), we believe you'll find this 4-ton heavyweight your long-awaited answer to . . . *lower cost hauling!*

See your Dodge dealer at your earliest convenience.

For low-cost transportation...switch to DODGE "Job-Rated" TRUCKS

"I'm glad I installed this OILGEAR



INNOVATION IN SAWMILL POWER"

IN the Fall of '48, Fred Menzner was in a jam. The Menzner Lumber Company's two mill boilers at Marathon, Wisconsin, were in bad shape. The steam feed needed replacement. The cutting season was close at hand.

"I felt I was taking all the chances in the world when I okayed the installation of an Oilgear Sawmill Carriage Drive," said Mr. Menzner. There was no drive like it in Wisconsin. He had not seen the Oilgear Drives in other states (33 in the Pacific Northwest alone). But the new drive promised trouble-free power, speed and control. He would have to buy only one new boiler and he could fuel that with waste sawdust and scrap. And he had a portable mill—just in case.

Then his sawyer turned balky. An old-time steam operator, this man had no use for the new-fangled drive. But Mr. Menzner demonstrated it patiently and the sawyer grudgingly took over.

The result at the end of the first season? More lumber cut faster, better, smoother. Power saved. No maintenance on the Oilgear Drive *and none needed*. No time out for drive adjustments, *and none needed*. No relining of brakes. No cable breakage, none of the usual trouble, delay and expense. No tired and crabby sawyer fighting with the engineer about greasing the main valve. No boiler to power the carriage drive as in the case of steam. No separate heating plant as in the case of other drives. No haulage of scrap or sawdust.

"Today I'm glad I chose Oilgear," said Mr. Menzner who has shown the drive to 12 other Wisconsin and Michigan operators. As for the sawyer, Oilgear is tops and he'd never go back to the tricky, backbreaking "shotgun" cylinder. Of all power types, Oilgear alone gives such flexible, dependable control of tremendous power and unlimited speed range.

Write for further information about Oilgear Fluid Power for Carriage Drives or for

Veneer Lathes	Set Works and
Unwinder Drives	Holding Dogs
Winder Drives	Conveyors
Surfacers	Gang Saw Feed Rolls
Turners	Paper Machine Drives
Niggers	Hold-down Systems
Barkers	Calender Drives
Edgers	Hot Plate Presses
Haulers	Baling Presses

...from the Wausau (Wisconsin) Daily Record-Herald, March 4, 1949

Said to be the first fluid power carriage drive installed in a Wisconsin sawmill is this Oilgear unit at the Menzner Lumber and Supply Company's Marathon mill. According to company officials, this drive eliminates the need of a separate steam boiler and is an important safety advancement since this fluid power drive is far less tricky than the old steam "shotgun" cylinder with its 36-foot-long 10-inch drive. Mr. F. A. Menzner was called upon to describe his new fluid power carriage at the convention of the Northern Hemlock and Hardwood Manufacturers' Association at Land O' Lakes. Shown standing by the Oilgear Drive are Philip Menzner (left) secretary-treasurer of the lumber company and Fred A. Menzner, president and general manager.

The Oilgear Company

435 N. E. Hazelfern Place, Portland 13, Oregon
or 1960 W. Pierce St., Milwaukee 4, Wisconsin
Field engineering and service available on West Coast

What's Your Toughest Sharpening Job?

MAYBE it's keeping big circulars like this in good working order. Maybe it's putting the right cutting edges on your band saws. Or perhaps you're having trouble keeping knives sharp and ready for fast production.

No matter what your toughest sharpening job involves, there's a Norton grinding wheel that can help to solve your problem. They're available in just the right abrasive and bond combinations to—

1. Cut high-speed steel fast and clean without danger of burning.
2. Produce a good finish.
3. Hold their shape.
4. Have a long, productive life.

Test these cost-cutting features on your toughest sharpening jobs without obligation. Your Norton abrasive engineer or distributor will be glad to arrange a trial and to help you select exactly the right Norton wheel for each operation.

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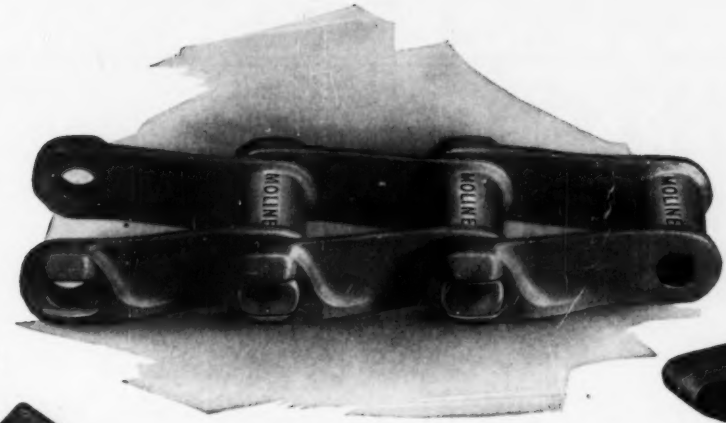
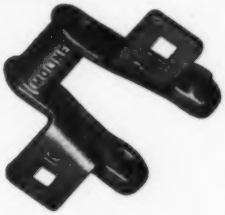
ABRASIVES

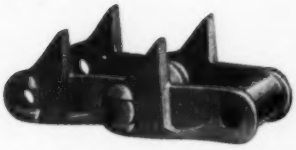
Making better products to make other products better



Popular Standard Attachments

Popular Standard Attachments





MOLINE

RIVETED DRIVE CHAINS

Rugged - Economical

Read Why

MOLINE RIVETED DRIVE CHAINS were designed for heavy drives and transfer conveyor purposes, in sawmills, the paper and pulp industry, etc. They are sometimes referred to as: "Sawmill" Pintle; "H" Class Pintle, or "Riveted Saw-Mill" Chains, but lately have found wide favor for many industrial applications requiring a heavier, more rugged chain than the "standard" or "400" Class Pintles. Moline Riveted Drive Chains are extremely strong and serviceable. The side bars of the links are reinforced with a "shoe" that strengthens and stiffens the links, and provides an added wearing surface, prolonging the life of the chain when it is operated in a trough or over floors or runways. The pin holes in the barrels and side bars are accurately cored to assure exactness of pitch. The rivets, forged from selected steels and rolled after forging to the exactly desired diameter, are of "T" head construction and engage two lugs, cast on the side bars, that prevent the rivets from rotating, thereby minimizing wear with resultant elongation of pitch.

We Manufacture a Complete Line of . . .

DETACHABLE TRANSFER CHAINS
RIVETED TRANSFER CHAINS
RIVETED REFUSE CHAINS
RIVETED CONVEYOR CHAINS
(MALLOY) LONG LINK CONVEYOR CHAINS
CONVEYOR FLIGHTS (Patented)
ROLLER TOP TRANSFER CHAINS

We Are Licensed Manufacturers of
PROMAL CHAIN

Moline Riveted Drive Chains are furnished usually in riveted construction but are available in pin and cottered assembly if desired at slightly higher price. They conform to "manufacturer's standard"—are interchangeable with "standard" chains of other manufacture—and can be furnished in Moline Malleable or Promal either as plain chains or fitted with a wide variety of attachments, to meet the requirements of individual conditions.

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TRinity 9182

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Tacoma, Wash.
668 East 11th St.
Main 2617

WESTERN EQUIPMENT LTD.
British Columbia & Youkon Distributors
Warehouse Stocks:
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MAKING MALLEABLE IRON CHAINS FOR 50 YEARS

MOLINE MALLEABLE IRON CO.

MILLER

... gets maximum steam
... at minimum cost
with an Abco Revision!

These revised furnaces and boiler settings applied to two 600-hp Casey-Hedges boilers for T. R. Miller Mill Co., Inc. Brewton, Alabama.

These "before-and-after" drawings graphically illustrate how ABCO design and engineering skill are paying dividends in steam production for T. R. Miller Mill Company, Inc., of Brewton, Alabama. Here's the economical way to convert your furnaces and boiler settings to today's operation requirements! This ABCO design incorporates superior principles of grateless, hearth-type, forced-draft combustion to give Miller the utmost in steam production per dollar of expense. Get in touch with ABCO today—no obligations.

ABCO DESIGNS ARE NOW SERVING THESE INDUSTRIES:

Tremont Lumber Co.
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Georgia-Pacific Lumber & Plywood Co.
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Your Inspection and Investigation of These ABCO Installations Is Invited.

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A DIVISION OF ACME BRICK COMPANY

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Northwest Representative: Blasdel (Blake) G. Smith, 3146 E. Burnside St., Portland 15, Oregon — VE. 6324

No other Truck Crane like this!

Here's a combination of advantages that puts the Northwest Truck Crane far ahead of the ordinary rig. The High-Speed Power Controlled Boom Hoist, independent of all other operations; Uniform Pressure Swing Clutches that take the jerks and grabs out of swinging; the Northwest "Feather-Touch" Clutch Control that assures ease of operation without delicate complicated mechanism; Cast Steel Machinery Side Frames that maintain shaft alignment and reduce wear and tear; easy upkeep and plenty of power. These, plus the many other Northwest features proved in years of service assure smoother operation and higher output.

The heavy duty carrier supplied with Northwest Truck Cranes is different! Designed by Northwest it brings you a box type frame braced and reinforced the full length as no other Truck Crane Carrier Frame is braced. Improved design has resulted in the better distribution of loads over the frame. Outriggers extend the full width of the Carrier and have considerable more bearing support when extended. Better positioning of outriggers relieves the Carrier of a great amount of stress when crane is operating.

The rear outrigger trunk is quickly demountable and makes easier conversion from Crane to Shovel, Dragline or Pull-shovel without repositioning the lower base.

The Northwest Truck Crane is the greatest advancement in equipment of this kind yet offered the Logger. We would like to tell you more about it. Don't buy a Truck Crane before you get full details on this outstanding piece of Northwest Equipment.

NORTHWEST ENGINEERING CO.
1510 Field Building
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only the best for the heart of the job

MAKE YOUR KEY MACHINE AN ALL-WEATHER LOG LOADER

PROFIT

No other Crane Carrier like this!

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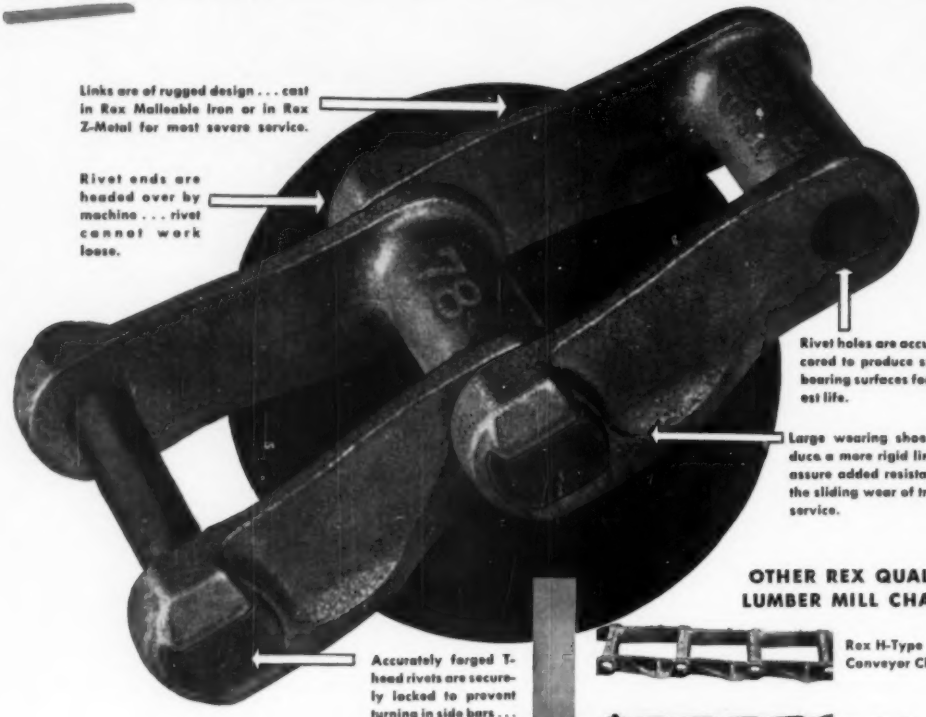
this DOESN'T TELL THE WHOLE STORY...


Links are of rugged design . . . cast in Rex Malleable Iron or in Rex Z-Metal for most severe service.
Rivet ends are headed over by machine . . . rivet cannot work loose.
Rivet holes are accurately cored to produce smooth bearing surfaces for longest life.
Large wearing shoes produce a more rigid link and assure added resistance to the sliding wear of transfer service.
Accurately forged T-head rivets are securely locked to prevent turning in side bars . . . eliminating excess wear.

. . . but it does indicate many of the reasons why you'll get more service, greater freedom from breakdowns, lowest overall cost with Rex H-Type Chain on your transfer conveyors.

The many superior design features illustrated above are easy to see . . . easy to appreciate in terms of longer service life. But the other parts of the story . . . the unequalled facilities and equipment . . . the unmatched technique in molding, melting, pouring and annealing . . . the skilled craftsmanship . . . that combine to produce Rex H-Type Chain you'd have to see to appreciate.

But, if you'll take our word for it and you want the chain that will give you the most, Rex H-Type Drive and Transfer Chain is your best bet.

For more of the story on Rex H-Type Chain and the rest of the complete Rex Line of lumber mill chains, mail the coupon.

OTHER REX QUALITY LUMBER MILL CHAINS

Rex H-Type Conveyor Chain

Rex Steel Chabelco Chain

Rex Durobar Combination Chain

Rex Roller Top Transfer Chain

Baldwin-Rex Roller Chain

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Milwaukee 4, Wis.
Gentlemen:
( ) Please send me my copy of Bulletin No. 48-27
( ) I would like to see a Rex Field Sales Engineer

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Company.....*Dept.*.....
Address.....
City.....*State*.....

CHAIN BELT REX COMPANY **Lumber Mill Chains**

CHAIN BELT COMPANY *of Milwaukee*

NEW RPM DELO OILS
cut engine wear-rate up to 85%

New RPM DELO Lubricating Oils contain advanced, special compounding. Proved in actual operation, they keep engines cleaner, increase protection and extend overhaul periods of all heavy-duty engines.

Cut liner wear rate up to 85%. In service under extreme operation conditions, these new RPM DELO Oils reduced wear-rates up to 85% over conventional heavy-duty type lubricants.

Reduced engine deposits as much as 75%. Superior compounding in new RPM DELO Oils kept top-ring grooves, oil rings, and skirt areas of pistons remarkably clean in high-temperature, high-output truck and tractor engines.

Saved 40% to 60% on maintenance. Records show that new RPM DELO Oils cut maintenance costs as much as 60%, reduced oil consumption 30% to 50% over the long run.

Proved in full range of engine service. This new line covers normal to extremely severe conditions. The grade that meets your needs will double protection against lubrication failures, give you all-around better engine performance.

RPM DELO Heavy Duty Lubricating Oil
A new, high quality-level compounded oil recommended for heavy-duty diesel or gasoline engines in normal to difficult service. (Meets U. S. Army Specification 2-104B.)

RPM DELO Special Lubricating Oil
Companion product to RPM DELO Heavy Duty Lubricating Oil. Has higher viscosity index for special operating conditions. (Also meets U. S. Army Specification 2-104B.)

RPM DELO Supercharged—1 Lubricating Oil
An entirely new product of higher quality-level than the products above. Fortified with new, more powerful compounding. Recommended for severe and abnormal engine service. (Meets U. S. Army Specification 2-104B, Supplemental List No. 1.)

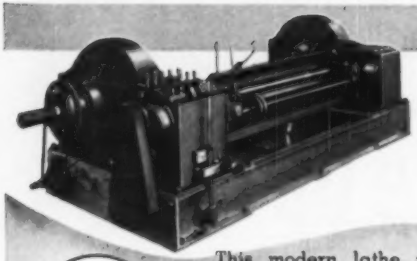
RPM DELO Supercharged—2 Lubricating Oil
Highest quality-level oil, designed for extremely severe operating conditions. (Meets U. S. Army Specification 2-104B, Supplemental List No. 2, also the rigid requirements of Caterpillar Tractor Company's Superior Lubricants—Series 2.)

Send for the full report on new RPM DELO Oils. For complete information, call your local Standard Representative or write to Standard Oil Company of California, 225 Bush St., San Francisco 20, California, today.

Standard Oil Company of California

RPM DELO LUBRICATING OILS

New and more Efficient Compounding keeps engines cleaner, increases protection, extends overhaul period

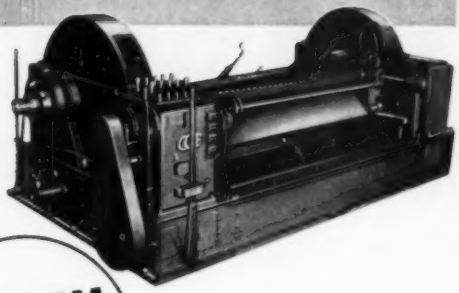


SMALL LOGS

This modern lathe veneers logs up to 30" diameter.

Its high speed and convenience of precision control assure profitable cutting of 9 to 10 inch logs formerly discarded.

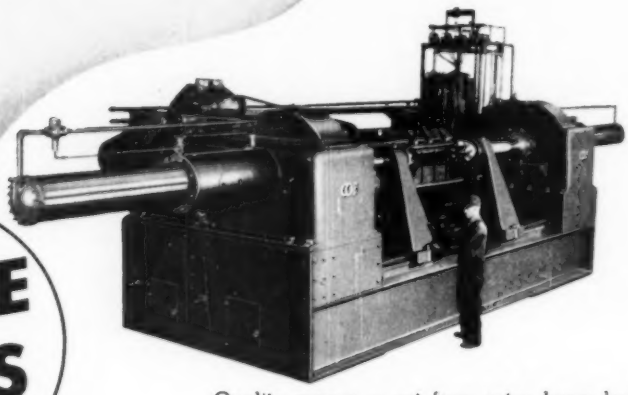
Available in 30" swing with knife lengths from 36" to 78"



MEDIUM LOGS

Here is a modern lathe embodying special features for high speed production of quality veneers from medium sized logs.

Built in 48" swing and with various knife lengths.



LARGE LOGS

Quality veneer is cut from extra large logs on this modern large swing lathe.

Manufactured in an 84" swing with various knife lengths.

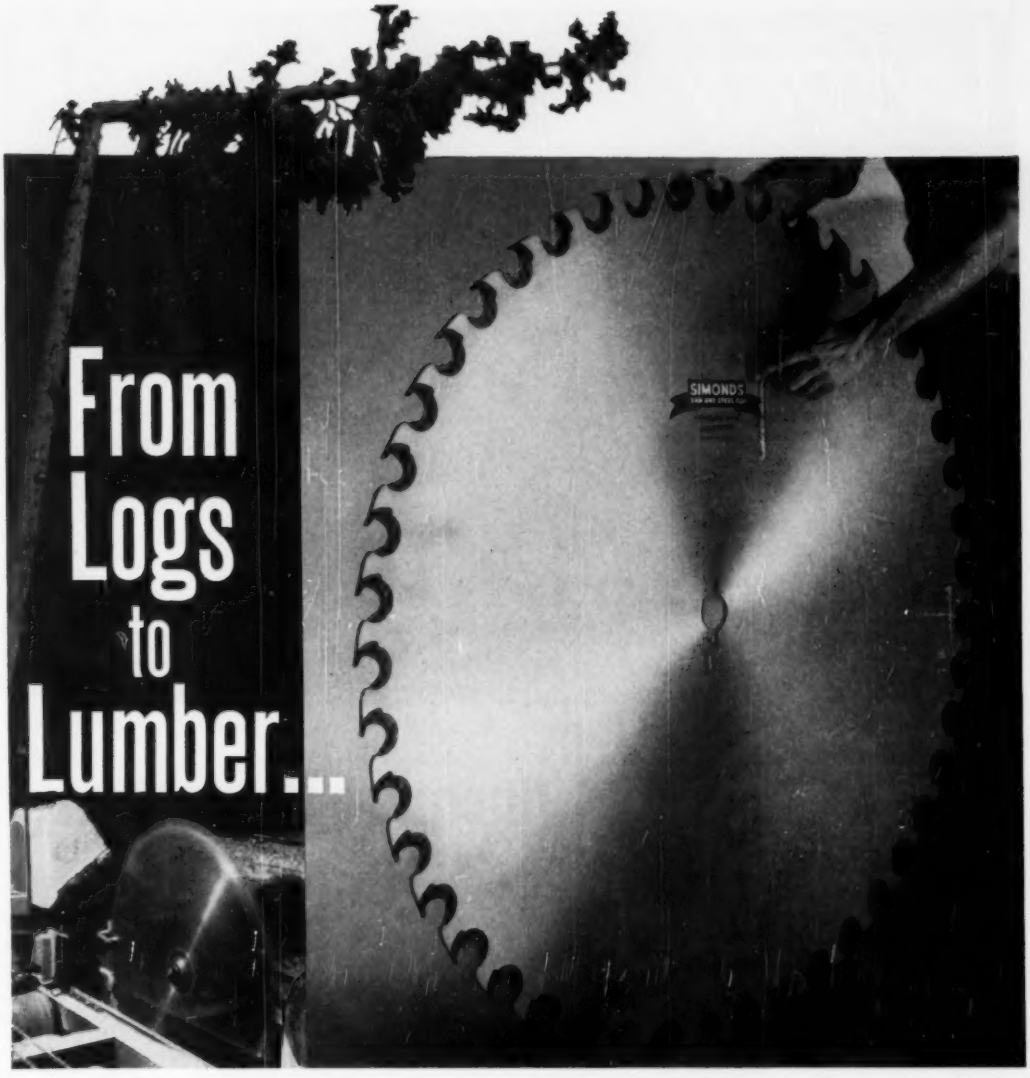
are

EFFICIENTLY *Veneered* *on* LATHES *of* *LATEST DESIGN* *by*

COE

The **COE MFG.** *Company*

350 BANK STREET PAINESVILLE, OHIO



... the shortest distance is via SIMONDS I.P. SAWS

These saws, with their "Blue Tip" Bits and "Red Circle" Shanks, are milled so they fit together with top precision . . . giving you a complete saw that *cuts up to 10% more* first-grade lumber per set of bits . . . and cuts it *faster*. Plates are held flat under heat-treat to eliminate strains and improve tensioning. And the special Simonds "2-Circle" design of gullet gives better support to *both* back and base of bit, preventing loosening of bits and shanks. This is the top saw for its job, in winter or summer sawing. Call your dealer today.

I-P. SAWS CUT-OFF SAWS RIP SAWS FILES PLANER KNIVES HIGH-SPEED KNIVES VENEER KNIVES CROSSCUT SAWS NARROW BANDS

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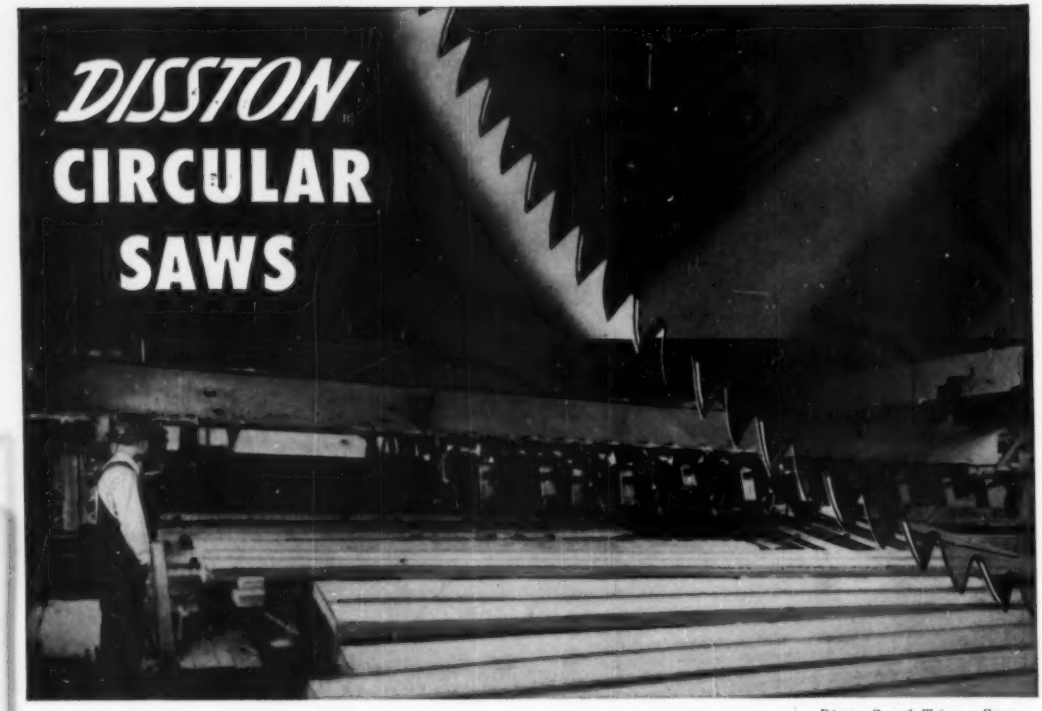
DISSTON CIRCULAR SAWS

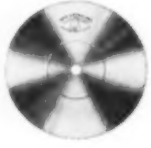


Disston Smooth Trimmer Saws

Disston Wide Band Saws
They lick the jobs that lick average saws, because tough Disston Steel holds its tension and its sharpness despite continuous heavy work. Save time costs and saw costs. You can get tooth shapes and spacings—band widths and gauges—as required for your jobs. Also furnished with sliver teeth.

Disston Edger Saws
For cleaner, closer cutting that saves material . . . For trueness and free running that guards quality and speeds production. Solid tooth types in 12" to 30" sizes. Also Disston Inserted Tooth Edgers.

Disston Trimmer Saws
More footage, truer ends, with less sharpening and downtime. For extra smooth end trimming—freedom from slivering at bottom of cut—use Disston Hollow Ground Trimmers. Made of special Disston Alloy Steel.



Increase Productivity —Cut Costs

More work per hour and more hours between sharpenings from Disston Large Rip Saws . . . Cut-off Saws . . . Edgers . . . Trimmers. They run true and cut straight—produce less sawdust and save downtime—because the uniformly hardened and tempered Disston Steel assures proper tensioning and edge holding qualities. Perfect balance and controlled set assure you of outstanding performance. By cutting your downtime and saw replacements you'll raise your output with Disston Saws for any work in your plant. The Disston line is complete as to sizes, tooth types and spacings for any woods and any feeds.

HENRY DISSTON & SONS, INC., 193 Tacony, Philadelphia 35, Pa., U. S. A.

In Canada, write: 2-20 Fraser Ave., Toronto 3, Ont.

Pacific Coast Factory: Seattle, Wash. *Branches:* Portland, Ore., Vancouver, B. C. *Midwest Factory:* Chicago, Ill. *Canadian Factory:* Toronto 3, Ont. *Australian Factory:* Sydney, N.S.W.

with the *RIGHT* gear ratios

Sure, it takes *horsepower* to pull a heavy load up a steep grade, whether it is on the highway or off. But don't overlook the part your gear box must play in delivering that horsepower to the wheels. It's in the transmission that the horsepower goes to work.

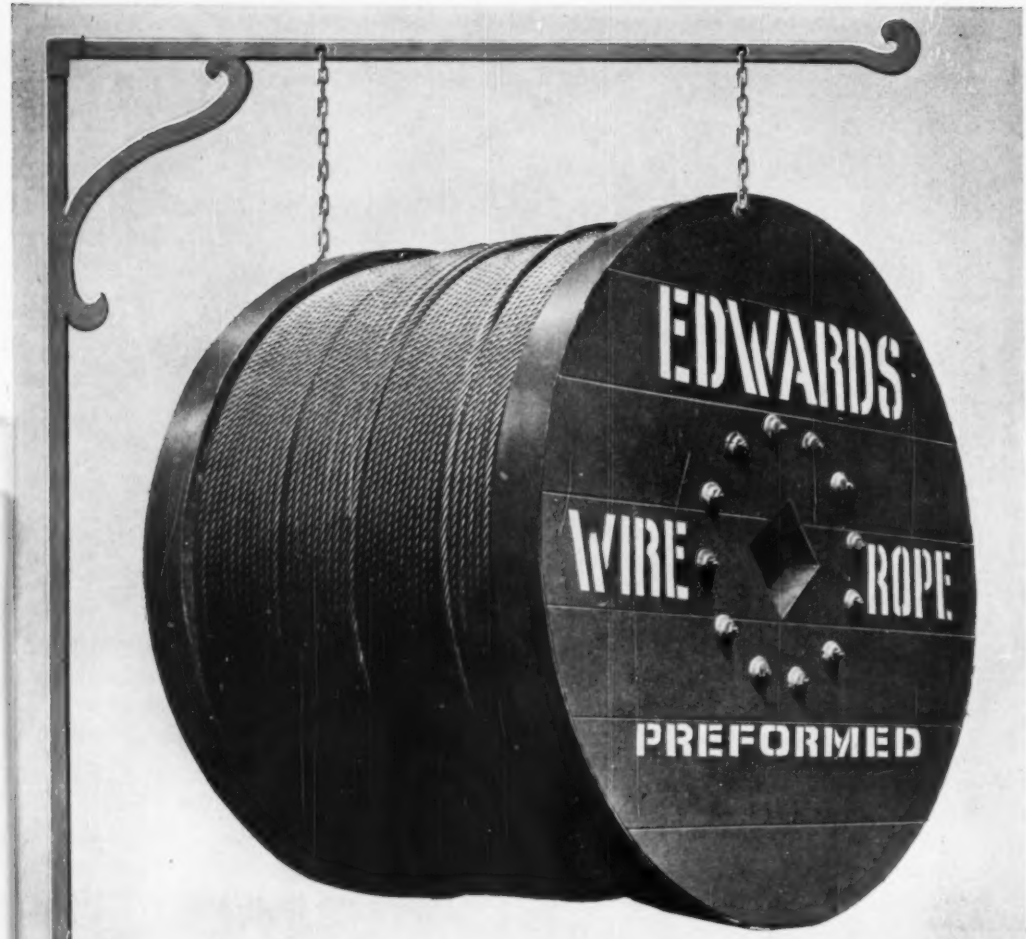
Only a transmission with exactly the right gear ratios for your particular operating conditions will permit most effective use of your engine's horsepower at all times. That means faster, more economical hauling.

Take advantage of the wide range of gear ratios you can select from the complete line of Fuller Heavy-Duty Transmissions and Auxiliaries.

There is one combination that is exactly right for your requirements . . . that gives you all the *added* advantages of Fuller's easy shifting and long, long wear-life. Write today for Fuller's 12-page catalog.

FULLER MANUFACTURING COMPANY (Transmission Division), KALAMAZOO 13F, MICHIGAN

Unit Drop Forge Division, Milwaukee 1, Wis. • WESTERN DISTRICT OFFICE (SALES & SERVICE—BOTH DIVISIONS), 1060 E. 11th Street, Oakland 6, Calif.



The Sign of Performance

E. H. EDWARDS COMPANY — SEATTLE · PORTLAND · SAN FRANCISCO · LOS ANGELES · HOUSTON

New Brake Linings ONLY UPKEEP —*in 220,000 Miles!*

Shown here is one of the largest loads of redwood lumber ever hauled out from the mill of the Willits Redwood Products Company of Willits, California. Eighteen thousand board feet are loaded on the two TRAILMOBILE trailers shown above, which are owned and operated by Luther Sherburn, who hauls lumber throughout the state of California.

Sherburn tells us that the TRAILMOBILES shown above have travelled over 220,000 miles and the only maintenance expense he has experienced has been for one new set of brake linings all around. That is an excellent record which results from a combination of the design which makes TRAILMOBILE known as the "easy pulling trailer," plus intelligent handling of the equipment on the highways.

If you are interested in trailers which pull easily, handle beautifully, give the cargo an easy ride, and are low in maintenance and repair costs—investigate TRAILMOBILE before you buy your next trailer.

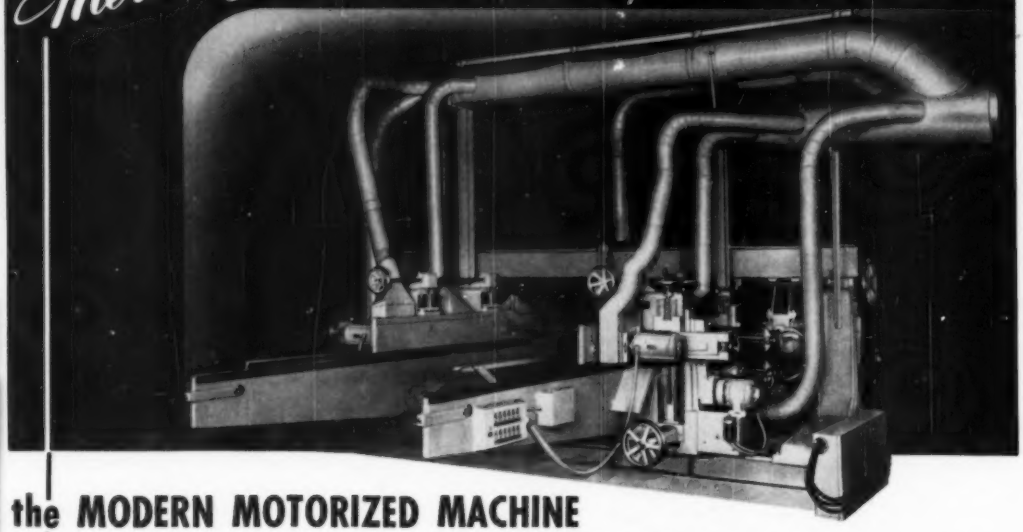
In addition to flat and roller bed trailers, TRAILMOBILE also builds low bed trailers for moving logging and road-building machinery, as well as logging dollies. If you are working in the woods or hauling over state and county roads, it will pay you handsomely to know TRAILMOBILE.

THE TRAILMOBILE COMPANY
BERKELEY, CALIFORNIA

TRAILMOBILE

LOS ANGELES · VENTURA · SAN LUIS OBISPO · BERKELEY · SACRAMENTO · SANTA ROSA · FRESNO · SAN JOSE · BAKERSFIELD
STOCKTON · EUREKA · SAN DIEGO · SEATTLE · SPOKANE · PORTLAND · MEDFORD · SALT LAKE CITY · PHOENIX · HONOLULU

Mereen-Johnson DOUBLE-END TENONER



the MODERN MOTORIZED MACHINE with Welded Steel Construction

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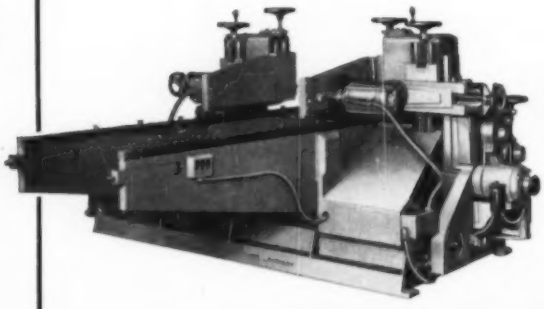

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The No. 300 Saw can be depended upon for accurate production at high rates of speed. It is made in a range of sizes to fit different conditions, and can be equipped with such labor-saving attachments as cope motors, stationary or jump dado arbors, or other devices to meet specific problems. *Order Bulletin No. 300.*

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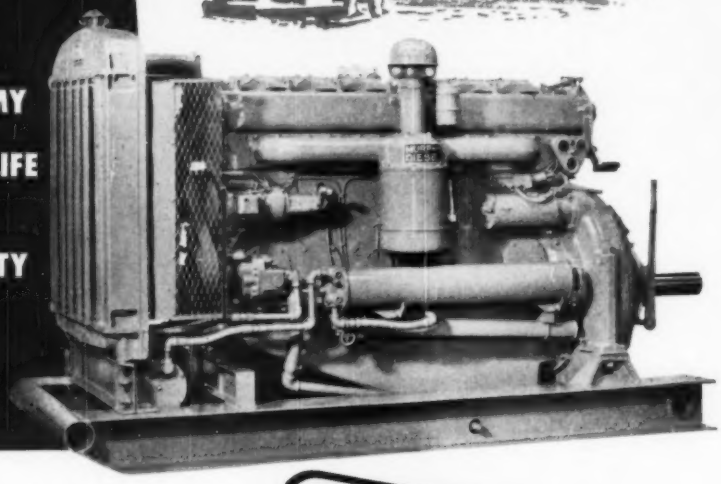

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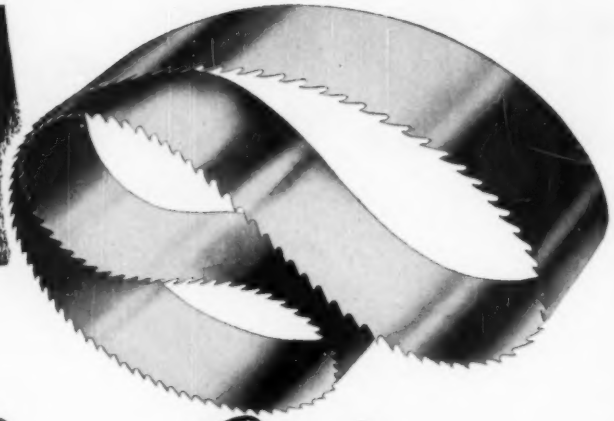
Truck Tires

TRIM CUTTING COSTS



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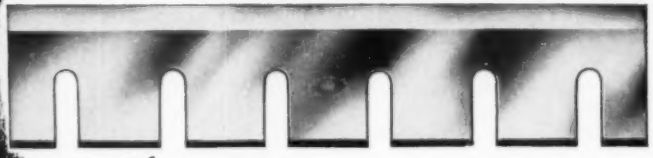
ATKINS "Silver Steel" BAND SAWS

Step up feeds, cut outage time, reduce filings and you're trimming cutting costs... you're building for profits. Let Atkins "Silver Steel" Band Saws help you do it.

These great saws are tempered by equipment exclusive with Atkins. They receive individual heat treatment according to the kind of sawing to be done. They are ground and tensioned under precision control. Finally, Atkins Wide Bands are given an additional bluing heat treatment that removes every trace of case or work-hardness. The end result is a saw that is pliable, yet tough ...uniform in gauge... with least shrink-tendency ...that shows almost unbelievable resistance to wear or chipping. *In short—a saw that will cut more board feet, with fewer filings and at lowest cost per board foot.*

Make sure you get Atkins "Silver Steel" Band Saws.

SHAVE PLANING EXPENSE



with

ATKINS "Silver Steel" PLANER KNIVES

Shaving planing expense involves more than reducing out time and down time... more than increasing number of board feet planed. It also involves quality of output. With Atkins "Silver Steel" Planer Knives lumber isn't "downgraded" because of gouging, burring, or stripping.

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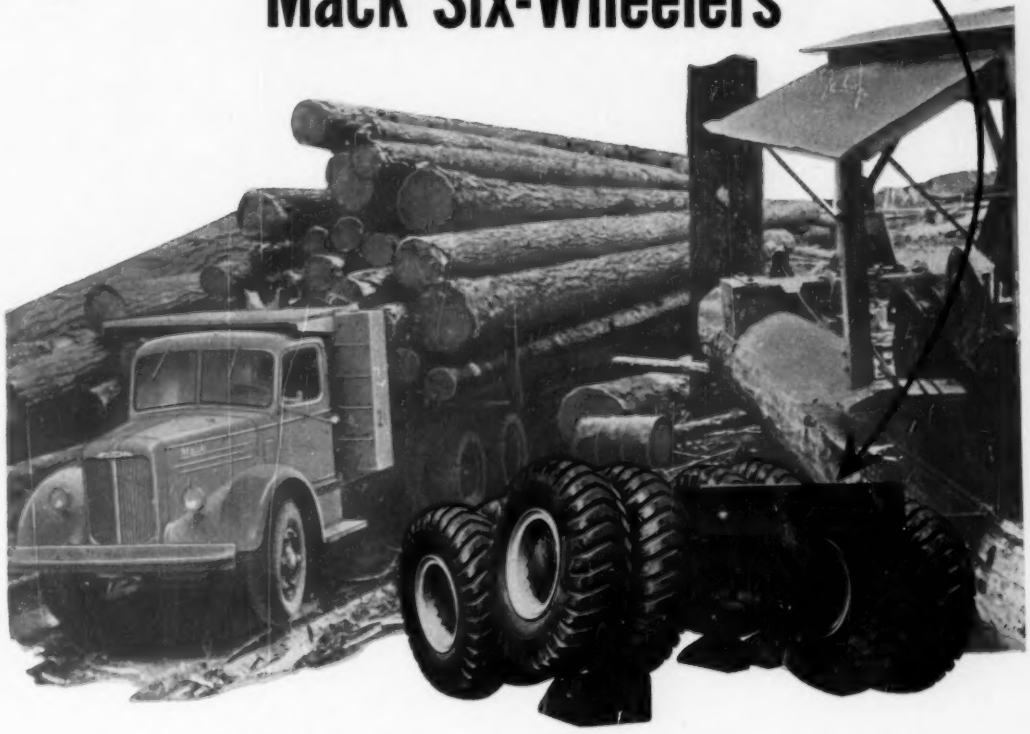

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The exceptional flexibility of the Mack Balanced Bogie insures equal traction, even tire loading and uniform braking on all four wheels. Exclusive Mack Power Divider assures traction at all times, regardless of terrain.

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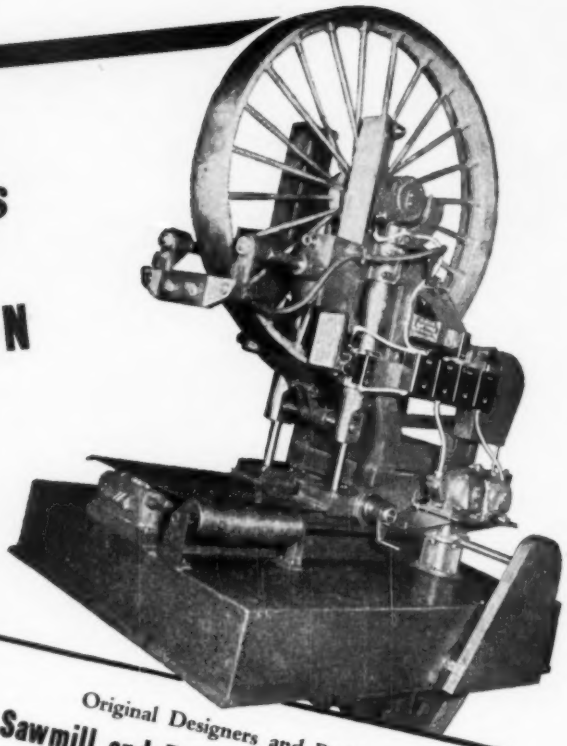

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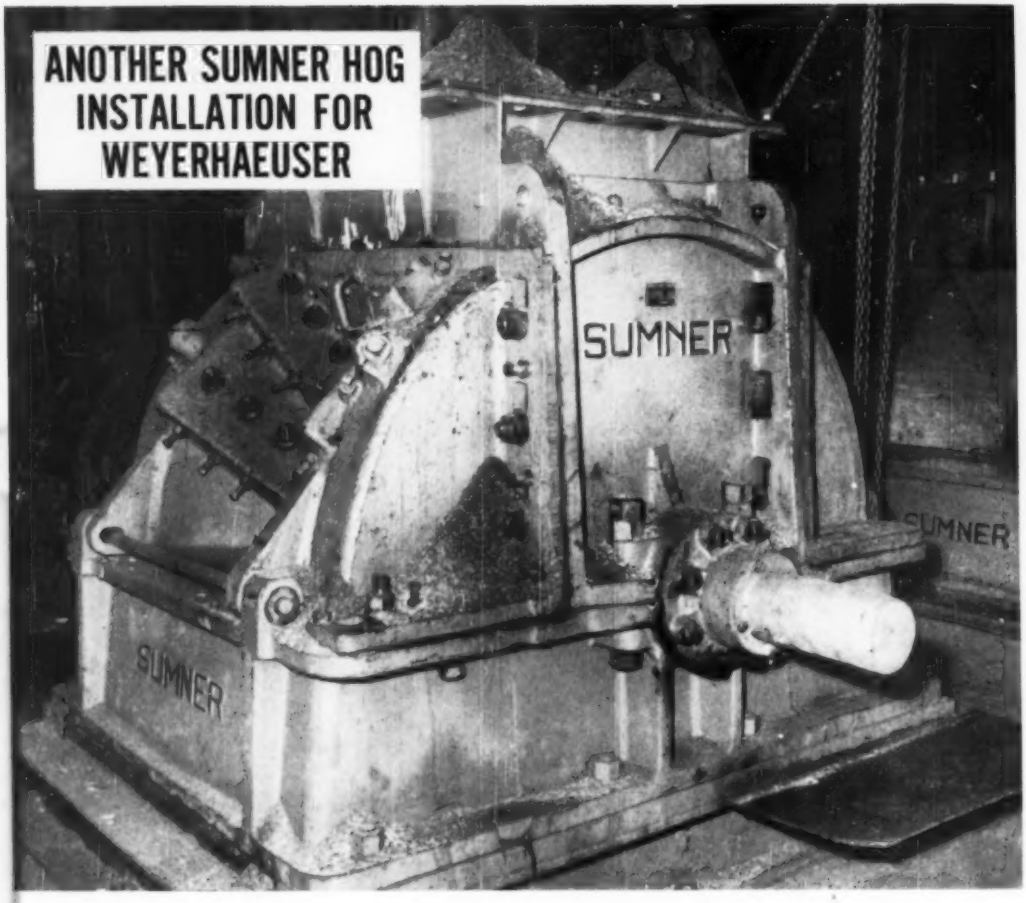

In 1928 the Weyerhaeuser Timber Company bought its first Sumner Refuse Hog for their Mill "B" in Everett. Above are pictured two of the four Sumner Hogs installed at the Weyerhaeuser plants in Springfield, Oregon in the Fall of 1949.

Most recently—in December, 1949—another Sumner Refuse Hog was installed, this for Potlatch Forests, Inc. in Potlatch, Idaho.

During this interim of 21 years, Weyerhaeuser, its affiliates and their various divisions have purchased approximately thirty Sumner Refuse Hogs, of all three sizes.

This long preference is indicative of the reliable performance given by the Sumner Hogs among the overwhelming majority of sawmills and pulp and paper mills in all the Western timber states and provinces.

Replacement parts for Sumner Hogs are always readily available.

You, as a progresaive mill operator, should review the double value offered by Sumner Refuse Hogs. First, they will satisfy your mill's own fuel requirements. Second, the excess fuel will prove a highly profitable by-product.

The RATED CAPACITIES per hour of Sumner Refuse Hogs are: No. 65—20 cords; No. 45—16 cords; No. 35—10 cords.

SINGLE, DOUBLE ANVILS

Nos. 45 and 65 have single or double anvils, with interchangeable and reversible knives. No. 35 Hogs have single anvils, interchangeable and reversible knives.

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Nos. 45 and 65 Hogs are All-Steel type. No. 35 Hogs are available in either All-Steel type or Standard type with cast-iron Frame. Center Sections and Rear Door.

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The
LUMBERMAN'S—

FOREST INDUSTRIES NEWS

Vic Olson, after a leave of absence, has resumed the management of the Washington Veneer Co., Olympia and Bellingham Divisions, as well as the Springfield Plywood Co., Springfield, Oregon, as president and general manager. Hal McCleary and Frank Abbott have resigned. The above companies are divisions of the Georgia-Pacific Plywood and Lumber Co.

Swift Berry has retired as general manager of the Michigan-California Lumber Co., Camino, Calif., and been succeeded by Al T. Hildman. Mr. Berry will remain as forest manager and superintendent of the Camino Tree Farm. He has been with Michigan-California since 1930.

George Spaur was named state forester of Oregon December 13 by the state board of forestry. Spaur has been acting state forester since the death of N. S. Rogers last September. For three years prior to that he was deputy state forester of Oregon. The new forester is a graduate of Oregon State College, with master's degree in forestry, joining the state forestry department in 1937. During World War II he served with the army engineers in Pacific campaigns, and with original occupation forces on Hokkido Island, Japan, now holding rank of Colonel in army reserves.

Harold Goodrich, well known Puget Sound logger, is now with the Insular Lumber Company, Fabrica, Occidental Negros, Philippine Islands where he is superintendent of logging railroad construction. Mr. Goodrich was for a long time superintendent of the Crown-Zellerbach Corp.'s logging activities at Neah Bay, Wash., and in more recent years was in charge of timber and log procurement for the Peninsula Plywood Corp., Port Angeles, Wash.

Ralph G. DeMoisy has been named acting technical director of the Washington State Institute of Forest Products, succeeding Dr. O. Harry Schrader, who has resigned to accept the position of Managing director of the Douglas Fir Plywood Association, Tacoma. DeMoisy has been on the Institute staff since last summer as executive asssitant. He formerly was assistant professor of Forest Engineering at Oregon State College.

The plant of the Somers Lumber Co., Somers, Mont., has been sold to a group of men headed by Alex Shulman, Orpheum Bldg., Seattle, Wash. Mr. Shulman told The LUMBERMAN plans for handling the operation have not yet been perfected. He said a group of inland empire men have indicated a desire to operate to one side of the big mill. There has also been talk that it might pay to start up the mill to salvage the several million feet of sinkers supposed to be at the bottom of the lake adjacent to the mill. The power plant which has been supplying power for the community for years has been shut down, other power sources now being available.

Axel Oxholm, well known throughout the American Lumber industry, recently died from a heart attack at Washington, D.C. It was largely as a result of Oxholm's investigation and report many years ago that the Swedish type log gang saw was put to use in the Pacific Northwest. Subsequently he located in Tacoma, where he organized and managed Pacific Forest Industries, a plywood exporting organization. He became a colonel during the Second World War and after the war rejoined the Department of Commerce. At the time of his death he was head of the department's office in the Virgin Islands.

Robert A. Murphy has succeeded J. P. Hennessy, as general manager of the McCloud River Lumber Co., McCloud, Calif. Mr. Hennessy, who managed the McCloud operations since 1936 resigned because of poor health. For many years Mr. Hennessy was active in Western Pine Association activities. Mr. Murphy has been assistant general manager for nearly five years.

Operations of Silver Skagit Logging Co. near Hope, B.C., have been terminated, and the equipment and machinery, which cost more than $500,000, have been acquired by Dietrich-Collins Equipment, Ltd., Vancouver. Silver Skagit Logging Co. started operations about four years ago as part of a program to clear of timber the area in Canada to be flooded by elevation of the Ross Dam in Washington. Another subsidiary, Decco-Walton Co., associated with the Walton lumber interests, is continuing to operate in the Skagit area, but on the U.S. side, although loading out logs over the roads originally built for Silver Skagit and dumping in the Fraser River near Flood. Rafts are built on the Fraser and towed to the Walton mills.

Ernest G. Sweigert, Portland, Oregon, became a director of Harbor Plywood Corp., Hoquiam, Washington, the first of December, filling a vacancy occurring with resignation from the Board by E. W. Daniels, who is now director of sales of the Corporation, according to announcement by Martin N. Deggeller, President. Sweigert is President of the Hyster Company, Vice-President of Electric Steel Foundry Company and director of Western Transportation Company, all of Portland, and director of Pacific Bridge Co., San Francisco.

O. D. Hallin, formerly of the Crown-Zellerbach Corporation timber department in Seattle, has been appointed manager of Pacific Mills' timber department at Vancouver, B.C., and vice-president of Northern Pulpwood and Badwater Towing Co., Pacific Mills' subsidiaries. He succeeds T. B. Jackson, who resigned recently to engage in private logging and lumber enterprises.

George F. Jewett, chairman of the board of Potlatch Forests, Inc., said recently that his company hopes to have its new Lewiston, Ida., $12,000,000 pulp and paper mill in operation by the summer of 1951. He indicated that log barking facilities will be installed to bark all logs entering the company's mills, including the sawmill. Mr. Jewett said the new mill will be designed to be as flexible as possible so as to be able to supply pulp and paper products currently in demand. Mr. Jewett said operation of the new pulp and paper unit would make it possible for the company to utilize the raw material to the fullest degree.

Several leaders of the logging industry in the international Northwest are scheduled to speak during the sessions of the Truck Loggers Association of British Columbia in Vancouver, January 18, 19 and 20. Among those on the program were E. P. Stamm, general manager of logging operations for Crown Zellerbach Corporation in the Columbia River basin; Henry Dennis, logging manager, Soundview Pulp & Paper Co.; R. J. Filberg, vice-president and general manager, Comox Logging & Railway Co.; John Liersch, assistant vice-president, Powell River Co.; James Fadling, president International Woodworkers of America; Ralph Baker, president of Standard Oil Co. of B.C., Dean Cecil Swanson and Hon. John H. Cates, provincial minister of labor. "The Art of Living Together" will be the theme of the convention, according to President G. Harold Clarke.

Wood from New Guinea is being tested at MacMillan Industries, Ltd., Vancouver, B.C., to determine its suitability for plywood manufacture. If the reports are favorable, Bulolo Gold Dredging, Ltd., will probably proceed with the building of a plywood plant in New Guinea capable of producing about 12,000,000 feet of plywood and veneer annually. If the mill is to be built, plywood specialists from British Columbia will be engaged to supervise construction of the mill.

C. J. "Chuck" Johnson has been appointed sales manager of Potlatch Forests Inc., succeeding the late Phil Pratt. He worked at the Potlatch Unit until 1935 at which time he was transferred to the sales office in Lewiston. He left Lewiston July 31, 1937, for Chicago as sales representative for the Weyerhaeuser Sales Company. He served in this capacity in Chicago and Cleveland until December 1, 1943. At this time he was named manager of the Inland Mill Sales of the Central Division of the "Sales Company." He assumed his duties with PFI September 5th of this year.

Forest Industries News (Continued)

The following bids were received by Oregon State Forester George Spaur for planting some 980 acres of land in the Tillamook burn; Walter T. Milo, Shelton, Wash., $14.40 per acre; Western Reforestation, Olympia, Wash., $15.85; Robert Jeibman, Portland, $18.70; Portland Construction Co., Portland, $21.00; J. A. Walsh, Marshfield, Ore., $26.50; R. W. Case, Portland, $39.90.

With convening of Congress in Washington, D.C., request will be made for a speedy appropriation of $800,000 to halt the spruce budworm infestation in Oregon and Washington, according to Rep. Holmes of Washington state. Oregon has already set aside $197,000 and Washington $18,000. Private interests have pledged $105,000 to make up a total fund of $1,200,000 for an all-out suppression effort.

The Western Forestry & Conservation Association at its recent 40th session in Portland, Ore., condemned the CVA project by the adoption of the following resolution: "The Western Forestry and Conservation Association reaffirms its previous stand on Natural Resource Development, that these resources be developed through existing agencies rather than through the creation of an over-all regional authority such as the Columbia Valley Authority, and similar Authority measures proposing to nationalize water and other natural resources, which are a direct threat to our democratic form of government."

The Sierra-Cascade Logging Conference is to be held in Chico, Calif. on the 2-3-4 of February 1950.

The 53rd annual meeting of the Maple Flooring Manufacturers Association will be held at the Blackstone Hotel Chicago, January 27. W. C. Abendroth, Reed City, Mich., is president and L. M. Clady, Oshkosh, Wis., Secretary-Manager.

The A. F. of L., Lumber & Sawmill Workers Union, will make a $100 per month pension demand its major point of contention during pending contract negotiations. Kenneth Davis, secretary of the union says the industry will be shut down if the demands are not granted by employers. Davis is quoted as saying the union will make no wage increase demands for 1950.

The 1950 O&C timber sales program just announced by D. L. Goldy regional administrator, calls for sales aggregating about 467,000,000 feet located in five O&C regions as follows: Salem district, 80 million board feet; Eugene district, 88 million board feet; Roseburg district, 92 million board feet; Coos Bay district, 107 million board feet; Medford district, 100 million board feet.

Final and official reports by the California Forest Experiment Station show that that state's lumber production in 1948 totaled 3,962,910,000 feet or an all time record. Pine production accounted for 36.8 per cent of the total cut; Douglas for 23.4 per cent; redwood, 20 per cent; white and red fir, 11.9 per cent; sugar pine, 6 per cent. Pine production increased 10.3 per cent over 1947; Douglas fir, 20.4 per cent; redwood, 49.7 per cent; white and red fir, 12.8 per cent; sugar pine decreased 15.8 per cent. 23.7 per cent of the pine cut was in mills of from 25 to 49.9MM capacity; 21.3 per cent in mills over 50MM capacity; 17.1 per cent in mills of from 5 to 9.9MM capacity. 21.3 per cent of the redwood cut was in mills of 50MM and over in capacity; 16.4 per cent in mills of from 25 to 49.9MM capacity; 22.1 per cent in mills from 1 to 4.9MM capacity; 16.9 per cent in mills from 5 to 9.9MM capacity. There were 578 active pine mills and 393 redwood mills.

Seven new Washington and Oregon tree farms have been "certified," bringing the total area in tree farms in these two states to 3,270,692 acres. The four new Oregon farms included the Peter-Glenn tree farm in Columbia county, Valsetz Lumber Co. tree farm, Polk and Lincoln counties; the Millicoma forest, Coos and Douglas counties, owned by the Weyerhaeuser Timber Co., and the Western tree farm, Lincoln county, jointly owned by the Saginaw Timber Co., Dant & Russell, Inc., and Inman-Poulson Lumber Co. The three Washington farms include the Mayr Bros. Logging Co. farm in Jefferson and Grays Harbor counties, and two owned by the Port Blakely Mill Co., Kitsap tree farms in Kitsap county and Blakely tree farms in Mason and Grays Harbor counties.

Forest Industries News (Continued)

A third annual gift of $5000 by B.C. Forest Products, Ltd., Vancouver sawmill and logging organization, has made possible the continuance of courses in forest entomology at University of British Columbia. H. G. Munro, vice-president of the company, in presenting a check for this amount, requested that the money be applied to the program of instruction in recognition of insects injurious to forest growth. In addition, advanced training will be provided for students who wish to specialize in forest entomology.

Henry J. Leaf, general manager of the Inman-Poulson Lumber Company, Portland, Oregon, has been re-elected president of the Columbia Basin Sawmills. Other officers for the coming year will be: Lewis H. Mills, Portland, vice president; Carl G. Bock, Portland, secretary-treasurer; E. H. Crosby, assistant secretary-treasurer and manager, and Willard T. Evenson, Clatskanie, Charles E. Castle, Garibaldi, and Lester J. Harding and R. E. Spaulding, both of Portland, trustees.

Paul M. Smith has been made general sales manager of the Wheeler-Osgood Co., Tacoma. Mr. Smith is secretary of the company and has been identified with the firm for 20 years.

H. G. Dowson is now handling the sales of the Rogue Lumber Sales Company, Medford, Ore. Clyde M. Shumaker, who has handled the sales for the past year and a half has resigned.

Southwest Lumber Mills, Inc., McNary, Ariz., has promoted W. F. Fields to the position of master mechanic for all the company's operations. Mr. Fields has been master mechanic of the company's Flagstaff, Ariz., plant.

Irwin & Lyons Lumber Co., North Bend, Ore., has remodeled another LCT for use as a coastal lumber vessel. This ship, similar to MV Rolando which the company previously converted to coastal lumber shipping, was expected to be placed in service early in December and be named MV North Bend.

Dean Gordon Marckworth of the University of Washington college of forestry has been appointed chairman of the forestry committee of the Seattle Chamber of Commerce for 1950. He is assisted by vice chairman William A. Eastman, consulting forester.

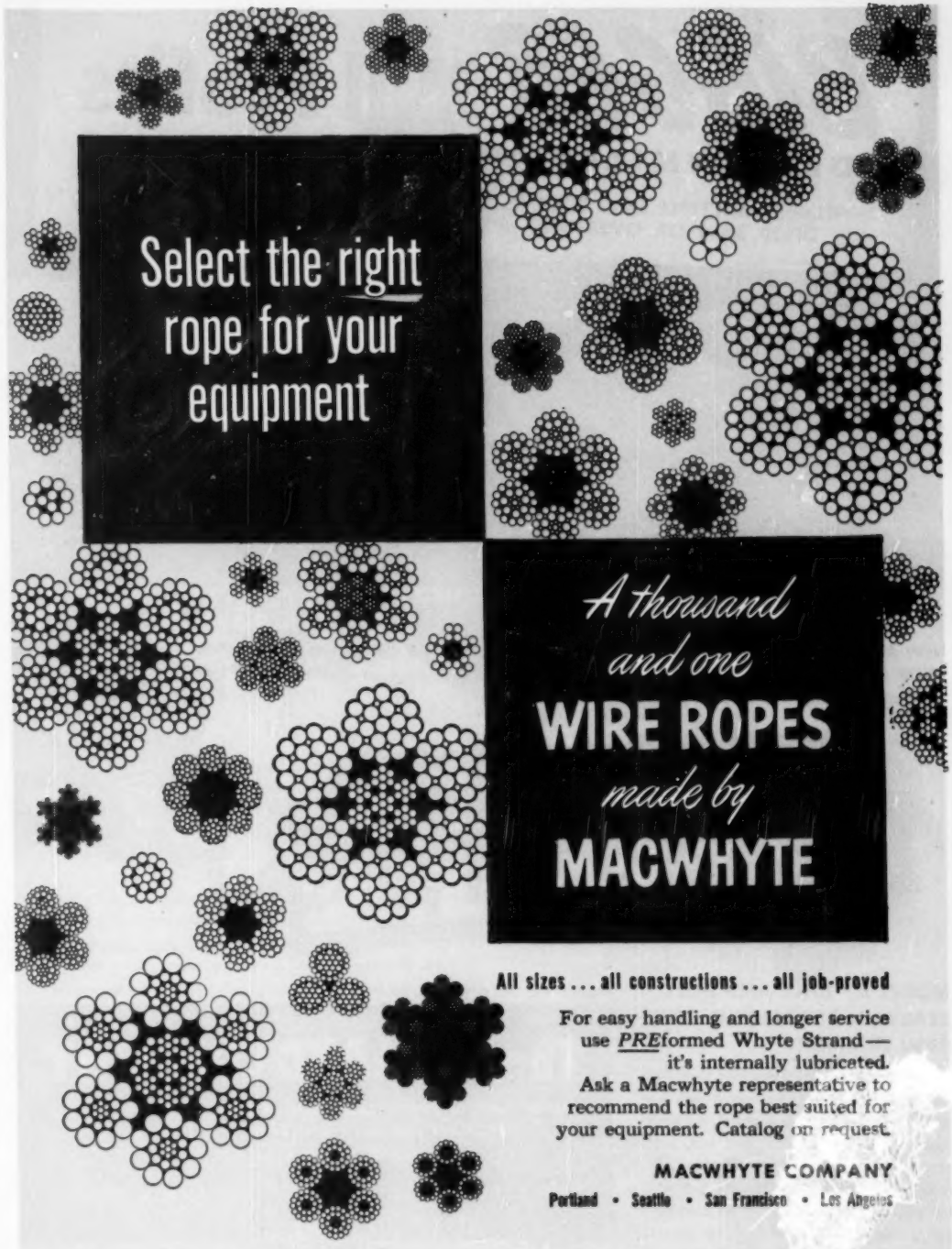
Southern Pine Association will hold a machinery show in connection with its next annual meeting at New Orleans in April. The association meeting is scheduled for April 17-19 and the machinery show April 19-20. The machinery show will be in the New Orleans municipal auditorium.

The U. S. Forest Services is calling for bids on an estimated 4,500,000 cords of dead pulp wood in Western Colorado. This timber was killed by a beetle infestation. The minimum bid to be considered will be 75 cents per cord plus 50 cents per cord for reforestation purposes. Some small amount of dead timber in the area has already been logged for pulp purposes.

B. C. Keeley, president of Empire Mills, Ltd., and Keeley Lumber Co., Vancouver, B.C., for the past 15 years, died at Vancouver General Hospital December 19, aged 61. His son, B. J. Keeley, will carry on the family lumber business.

John Hawley, pioneer lumberman, died at Ontonagon, Michigan, December 19. He had been in the lumber business since 1896. In 1903 he joined with local and eastern men in forming the Ontonagon Lumber and Cedar Co., and was manager of that business for a number of years. In 1913 he established his own lumber business and after the termination of that operation in 1921 was active in logging and other industry matters until he again began lumber manufacturing in 1930. This business has continued up to the present.

Charles F. Evans of Atlanta, Ga., assistant regional forester for the southern region of the U. S. Forest Service, was elected president of the Society of American Foresters on December 10 by mail ballot for the two-year term 1950-1951. He succeeded Clyde S. Martin of Tacoma, Wash. Clarence S. Herr, resident woods manager of the Brown Company, Berlin, N. H., was elected vice president of the Society.



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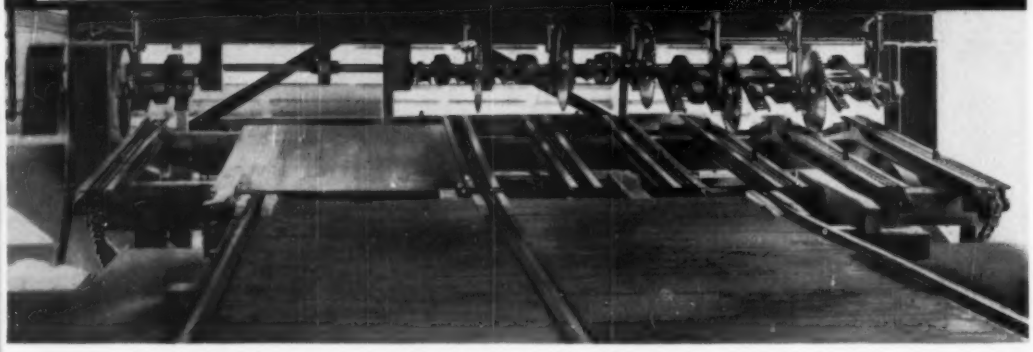
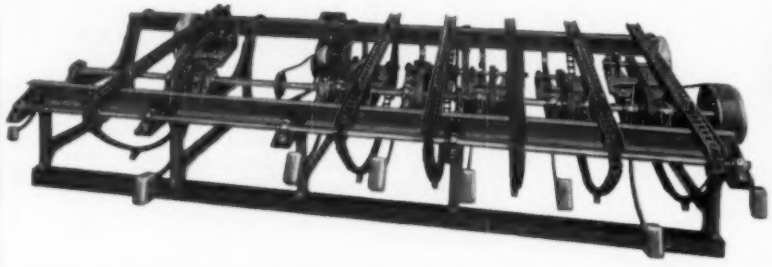
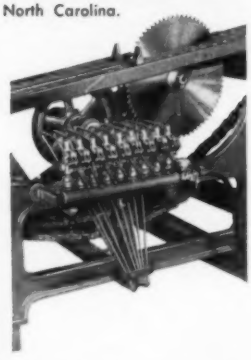
WHELAND MULTIPLE SAW TRIMMERS TO MEET INDIVIDUAL REQUIREMENTS. DROP SAW OR OVERHEAD, MECHANICALLY OR AIR OPERATED.



Wheland Model 48 Trimmer in Williams-McKeithan Lumber Company, Pollocksville, North Carolina.

NEW MODEL 48 BALL AND ROLLER BEARING OVERHEAD, AIR OPERATED, DROP SAW TRIMMER: V-belt drives. Entirely self-contained, requires no special foundations or overhead supports.





Air control valves for air operated trimmer.

MODEL 47 BALL AND ROLLER BEARING AUTOMATIC DROP SAW TRIMMER:

Entirely self-contained iron and steel construction. Completely equipped with ball and roller bearings throughout. All bearings sealed against dust and grit, pressure grease lubricated. V-belt drive, the most positive belt drive known. Self-contained feed works. Saws drop automatically. There are several ways to operate saws with complete adaptability to your special needs.

BULLETIN AND INDIVIDUAL ENGINEERING RECOMMENDATIONS ON REQUEST. WRITE DEPT. L-5

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MANUFACTURERS OF COMPLETE SAWMILLS AND AUXILIARY MACHINERY • CIRCULAR SAWMILLS—HEAVY, PORTABLE • BAND SAWMILLS • EDGERS AND TRIMMERS
TRANSMISSION AND CONVEYOR MACHINERY

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WHELAND

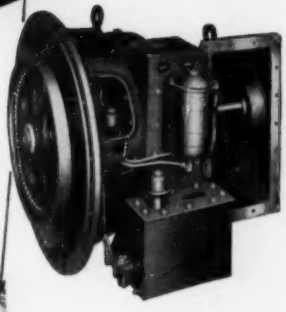
FOR OVER 80 YEARS . . . THE FOREMOST NAME IN SAWMILL EQUIPMENT

Eliminates Gear-shift Guesswork

Guesswork as to which gear to use is eliminated when you have a Twin Disc Hydraulic Torque Converter on your excavator . . . your yarder or loader . . . or on your oil well drawworks.

A Twin Disc Hydraulic Torque Converter automatically selects and transmits the correct output torque and speed for varying loads within its working capacities . . . allows your engine to run at its most efficient speed. Balance between output torque and speed is automatically accomplished without any mechanical speed change. Also, the cushioning effect of the hydraulic unit protects both the engine and the driven parts against destructive shocks.

Write for your free copy of the latest issue of "Production Road" featuring the logging industry. For further information on Twin Disc Hydraulic Torque Converters, ask for Bulletin 135-C. TWIN DISC CLUTCH COMPANY, Racine, Wis. (Hydraulic Div., Rockford, Ill.).



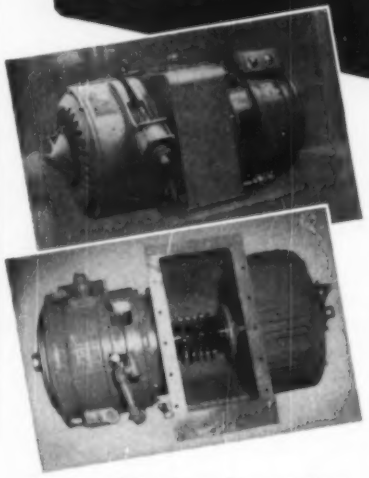
A Twin Disc Hydraulic Torque Converter (Lysholm-Smith type).

SPECIALISTS IN INDUSTRIAL CLUTCHES SINCE 1918

SHOW PIECE for LOGGERS

A NEW PACIFIC-WESTERN PRODUCT

Willamette Model 200 Yarder shown at 40th Anniversary Pacific Logging Congress



Close up photo at top shows Pacific-Western Torq-Master (left) and the new Pacific-Western Torque Converter (right). Insert bottom photo shows reverse of above with housing opened to give view of coupling sprocket chain linking Torq-Master and Torque Converter.

Of interest to progressive logging operators who visited the 40th Anniversary Pacific Logging Congress at Seattle recently was the Willamette yarder equipped with both a Pacific-Western Torq-Master and the new Pacific-Western (Schneider System) Torque Converter. This is the first stock yarder to team up Pacific-Western's popular Torq-Master with its brand new partner, the Pacific-Western Torque Converter.

Years of careful study by Pacific-Western design engineers have gone into the application of the Torque Converter. After experimental models had been thoroughly proven in the woods under varied operating conditions, the Pacific-Western Torque Converter was finally made available to the logging industry.

Now loggers can achieve greater efficiency from yarders than ever before at infinite speed variations and torque ratios. With a Pacific-Western Torque Converter the engine can't be overloaded or stalled.

On logging shows all over the West you'll see more and more yarders equipped with the Pacific-Western Torque Converters. One big reason for this quick acceptance is the fact that Pacific-Western's entire facilities are close at hand for Western customers. Plants and service representatives are located in each of the principal Pacific Coast cities.

Because products built by Pacific-Western provide greater power to bring in more logs, you'll find that they can reduce costs and increase production on your own show.

Write, wire or phone your nearest Pacific-Western Office

Plants at SEATTLE, SAN FRANCISCO and LOS ANGELES

Sales Representatives at PORTLAND, DENVER, HOUSTON and VANCOUVER, B. C.

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PACIFIC-WESTERN

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GEAR PRODUCTS

WASHINGTON

keeps the logs moving in the Redwood country, too!

DOLBEER-CARSON LUMBER CO., one of the oldest operators in the Redwood region, has been a consistent user of Washington logging equipment for many years.

At two sides currently operating on the Elk River, Humboldt County, California, Washington yarding and loading units help keep the big logs moving. Latest addition is a Model 307 yarder, delivered through Fred E. Barnett Co., Washington sales representative.

In every type of logging, experienced operators recognize the dependability, constant advances in engineering and centralized responsibility that backs up the outstanding performance of Washington logging equipment.

TOP VIEW shows the Washington L150 loader employed on side No. 2 by the Dolbeer-Carson Lumber Co. The 200-hp Cummins diesel powered loader has centralized controls and car-spotting drum in front.

LOWER VIEW shows the Model 307 Washington yarder in operation on side No. 1. Power is a 275-hp Cummins diesel, driving through Twin Disc torque converter and Western Gear Torq-Master.

★ ***Write or see your dealer for full details about Washington logging equipment for your particular need.***

YARDERS • LOADERS • TRAKLOADERS • BLOCKS and RIGGING • FAIRLEADERS • HOOKS and TOOLS

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Boise, Idaho M C Company
Coos Bay, Oregon Coos Bay Supply Co.
Manila, P. I. The Edward J. Nell Co.

PROGRESS TAKES ANOTHER STEP IN

Haul-road building

AND HERE'S THE EQUIPMENT THAT'S DOING IT

TIME and cost figures hit the skids when haul-road building or "rocking" is put in the hands of matched "Caterpillar" DW10 Tractor and No. 10 Scraper units. Though comparatively new in some timber regions, these quick-loading, big-capacity, truck-speed units are doing great earthmoving work wherever they are used.

Working for the Hammond Lumber Company on the construction of 2½ miles of redwood access road on the Elk River (Calif.) Show, three "Cat" DW10s are moving approximately 260 bank-measure yards of fill material per hour on 1000-foot one-way hauls. Spreading is smooth and accurate. "Rocking" already-built roads is equally fast and economical. (With their open-top design, "Caterpillar" Scrapers can also be shovel-loaded.)

Says Edward Wachter, Construction Superintendent, "For hauling rock and general earthmoving work our fleet of 'Caterpillar' DW10s is reducing our road construction costs and speeding up work decisively."

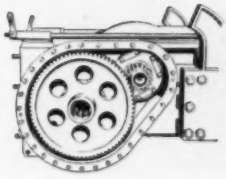
Want more information about money-saving "Caterpillar" road-building equipment on *your* timber operations? See your "Caterpillar" dealer. (No obligation.) Meantime, USE THE COUPON—*now*.

CATERPILLAR TRACTOR CO., San Leandro, California; Peoria, Illinois

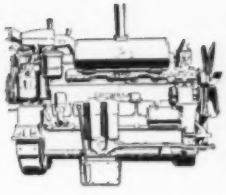
NOTE. "Caterpillar" W 10 Wagons (14-heaped-yard capacity; bottom dump) and Athey PD-10Q 15-ton side-dump rock wagons are also available for teaming up with DW 10 Tractors.

Look under the hide

OF THE "CAT" DW10

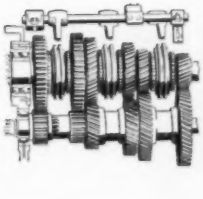


SPEEDS UP TO 24.5 MPH. Three complete ranges of speed are available with a choice of final drive gears. Many operators keep all three sets in stock to fit their DW10s to the job, ground conditions or haul distances. Differential-type rear end, combined with steering brakes, enables the DW10 to "walk" through soft spots on the fill. Full-floating drive axles are an assurance of dependable performance under the roughest of conditions.



ALL-"CATERPILLAR" BUILT. Undivided manufacturer responsibility! Engine, transmission, clutch and final drive—all are 100% "Caterpillar" built and designed for each other. The engine, 115 honest horsepower, is known the world over for its dependable and economical performance. Its own independent gasoline starting engine is itself started electrically, or can be started by hand in case of battery failure. The engine is the heart of your operations . . . use the best.

EASY SAFE OPERATION. One way to get high earthmoving production is to design equipment for safety and ease of operation. Four-wheel stability; hydraulic booster steering; selective-acting air brakes on the DW10 and trailed unit; hydraulically controlled spring-mounted seat and unexcelled visibility—these add up to all-important reasons why operators prefer DW10s.



QUALITY BUILT. Typical of the quality designed into the DW10 is the constant-mesh, easy-to-shift transmission. A gear-type pump forces oil over the upper shaft to lubricate effectively the transmission on any grade. To insure long life, a large replaceable filter element guards against destructive abrasive materials. Just one of the many features that can boost production for you.

EASY TO MAINTAIN. "Caterpillar" has always designed for ease of service. Fuel injection equipment that can be replaced like spark plugs, with no adjustments required; a metallic-lined double-disc flywheel clutch that can be removed without disturbing engine or transmission—these are just two of many reasons why owners report full satisfaction. Hundreds of well-equipped "Caterpillar" dealers, each within easy job distance, constitute another reason why DW10s boost hauling profits.

CATERPILLAR

REG. U. S. PAT. OFF.

DIESEL ENGINES

TRACTORS

MOTOR GRADERS

EARTHMOVING EQUIPMENT

CATERPILLAR TRACTOR CO.

Dept. TL-1, Peoria, Illinois

Please send me your latest booklet, "The 'Caterpillar' Diesel DW10 in Action."

Name _____

Address _____

Take A COX CHIPPER CHAIN User's Word For It!

"Cox Chipper Chain is standing up under very severe usage."

—M. W. STAPLES, Field Supervisor, THE DAVEY TREE EXPERT COMPANY, Kent, Ohio

M. W. STAPLES, Field Supervisor
The Davey Tree Expert Company
Kent, Ohio

Mr. Staples writes: "We are delighted at the way Cox Chipper Chain is standing up under very severe usage. The ease with which the chains may be reconditioned is especially impressive. And they have a very long life.

"Our men like the chains for many reasons, one important one being the manner in which they feed themselves in making horizontal cuts. It is a feature that makes the day's work much easier.

"We are now using these chains over a wide area and on at least five different makes of saws. Although many of them are operating under the most difficult conditions, all reports concerning their performance are favorable."

Cox Chipper Chain is designed for fast, multi-purpose cutting in both hard and soft wood... is easy to sharpen... built to last... will give any power saw increased cutting efficiency.

SAW CHAIN SPECIALISTS
Oregon Saw Chain
MANUFACTURING CORP.
2712 N. MISSISSIPPI AVE. • PORTLAND 12, ORE.

COX CHIPPER CHAIN
THE OREGON CHAIN WITH FAST-FILE TOOTH

Ask for Install—Genuine COX CHIPPER CHAIN
...The OREGON CHAIN with FAST-FILE TOOTH

ACCEPT NO SUBSTITUTE. WRITE FOR NEAREST DEALER'S NAME. STATE MAKE OF SAW AND BAR LENGTH.

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NEW ITEMS-
H78-Roller Top
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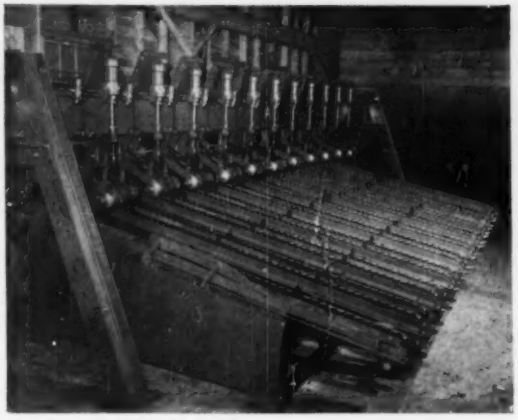
PORTLAND—Power Transmission Products Div. of Portland Iron Works



Recently shipped to M. & M. Woodworking Co., Portland, Ore.

Be Sure With

ALBANY

Random Length Air Lift Trimmer

DESIGNED TO FIT THE MOST EXACT REQUIREMENTS

Outstanding Features in Albany Trimmer Solinoid Control Valves

All Steel Construction for Durability.

Anti-Friction Bearings Throughout.

Long Table to Allow Time for Accurate Grading.

Adjustable Cushion Built Into Cylinders.

Independent Ladder Supports.

Write, Wire or Phone for Details

We also manufacture random length, smooth end wheel type trimmers.

ALBANY MACHINE AND SUPPLY CO.

(FORMERLY ALBANY ENGINEERING & SUPPLY CO.)

RENE FRITZ, MANAGER

ALBANY, OREGON — PHONE 1341

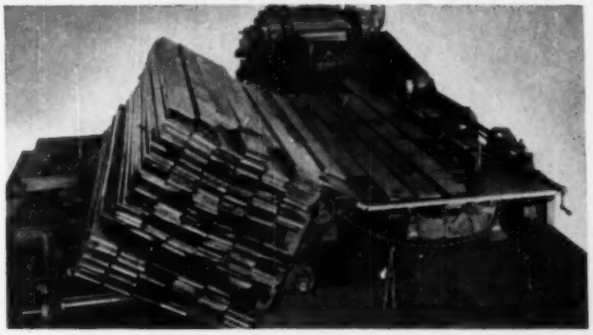
Save Labor -- Reduce Costs -- Increase Production With The Moore Tilting Hoist

Check These Advantages

- Increases production of planer, matcher, cut-off or trim saws, or resaw.
- Handles stickered or sold unit packages.
- Maintains convenient working level for operator.
- Can be used for building up package loads at end of sorter.

Moore Tilting Breakdown Hoist raises and tilts unit package of lumber, either bulk piled or stickered, so one man can easily feed high speed planer or other machines. It is also used to raise unit package for stacking lumber on kiln loads.

Make MOORE your source of supply for all kiln and lumber handling equipment. Write for information today.



Moore Tilting Breakdown Hoist keeps fast feed planer operating at full capacity. Can also be used to stock unit packages.

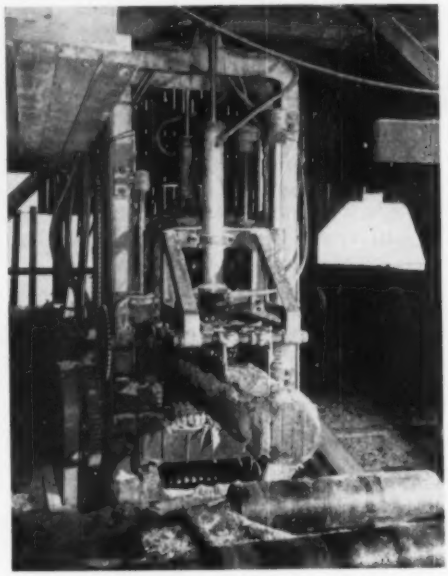
MOORE DRY KILN CO.

VANCOUVER, B.C. — BRAMPTON, ONTARIO

JACKSONVILLE, FLORIDA — NORTH PORTLAND, ORE.

MOORE DRY KILNS

CROSS-CIRCULATION — INTERNAL FAN SYSTEM



30" gangsaw with our new Log guide No. 3 mounted on top feed roll frame.

46% Overrun on Salvaged Small Logs

"The first four-hour run was for small logs (10" and under). During this period 273 logs went through the mill which scaled 11,820 board feet gross log scale and 10,580 board feet net scale. From these logs 15,417 board feet of lumber was produced which gave an overrun of 46%."

Above is quoted from a government utilization study on operations of the Dwyer Lumber Co., Portland, Ore. Having replaced a portable circular mill with a "Swede" gang mill, Dwyer also increased its band mill production 10%. Fire protection has been simplified with cleaned up woods. Log yield from a given area is up 25%. For complete details write

MILL ENGINEERING & SUPPLY CO.

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Export Dept.:

Frazar & Hansen, Ltd., 301 Clay St., San Francisco 11

Here are 3 good reasons why J&O H-Type Heads are always your best buy . . .

1. *You get GREATER FOOTAGE—lower unit costs!*
2. *You get UNIFORMITY of PATTERN—all the way!*
3. *You get FASTER SERVICE—stock or specials!*

When QUALITY and QUANTITY production hinge on cutter heads, call Jones & Orth! J & O heads help you cut costs, meet production schedules—maintain your reputation for QUALITY!

Phone or write our nearest branch!

TONGUE SIDE HEAD

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Need specially designed cutter heads? Let our engineers help! Write us in detail. Prompt service!

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SEATTLE 14, WASH.

THIRTY YEARS AGO

From the Files of
THE LUMBERMAN, JAN., 1920

H. S. Graves, Chief forester of the United States Forest Service in an extended statement said that the supply of virgin timber in the south would be completely exhausted in from ten to fifteen years. He said that for the country as a whole the rate of depletion was two or three times as fast as growth. Forester Graves bemoaned the fact that the Forest Service did not have money enough to employ an adequate staff to make studies and investigations.

Schafer Bros. Logging Company purchased the Sunset Shingle Mill at Montesano, Wash., and announced the plant would be modernized and enlarged and used to cut cedar produced in the company's logging operations.

McCleary Timber Co., McCleary, Wash., announced that it planned to erect a veneer plant at Olympia, Wash.

The Tacoma Lumbermen's Club, which had been running for about three years, was incorporated. Ernest Dolge, president and manager of Ernest Dolge Inc., was president.

The Long-Bell Lumber Co., optioned 75,000 acres of Weyerhaeuser Timber in Cowlitz County, Wash., which had an estimated stand of 2,000,000,000 feet of timber. Predictions were made that this deal indicated Long-Bell planned to build a mill in the Northwest.

W. W. Graham came to Seattle from Chicago to manage the Pacific Coast buying office of the Coast Lumber Company.

The North Pacific Lumber Company of Portland, Ore., made the first shipment of Douglas fir timber cut according to the association's new density rules. The timbers were shipped to the Navy yard at Brooklyn, N. Y. The company announced that it had no difficulty meeting the requirements of the new grade.

Fruit Growers Supply Company placed orders for a large amount of machinery for its new sawmill at Susanville, Calif., which would be 214 feet long and 100 feet wide.

W. J. VanDusen, for six years with the British Columbia provincial forest service, resigned to enter private business.

Elmer DeMuth and George Hutton announced plans for building a veneer plant at Olympia, Wash.

The West Coast Lumbermen's Association's monthly barometer showed that the mills had on hand orders for 12,485 carloads of lumber, a record volume of unshipped business.

So much for the past. . . . In the Future, Try "HUSS"

Huss Lumber Co.

2301 North Racine Avenue .....CHICAGO 14, ILLINOIS

WESTERN LUMBER and PLYWOOD

IS YOUR GRINDING DEPT. AS UP TO DATE AS YOUR PRODUCTION EQUIPMENT?

The fact is sometimes overlooked that an efficient well equipped grinding room will do as much for lowering production costs as the most expensive production equipment. No matter what the efficiency of your production equipment, it can not be better than the efficiency of the cutting tool employed—whether straight knife, circular saw, circular knife or others. Likewise, a cutting tool is no better than its cutting edge. To prevent wear and tear on your machines . . . to prevent excessive production costs . . . your cutting tools need the precision care that only better engineered equipment can give them. Let your production equipment do a 100% job with cutting equipment that is 100% efficient. One of Samuel C. Rogers complete line of modern grinding machines is shown below. It is increasing knife life 30% or more—get the facts. Write today for the full story on how you can lower production costs.

ROGERS B-20
Knife Grinder

Quiet, smooth reversing motor drive, excellent grinding control, elimination of many unnecessary parts plus all steel welded base makes this Rogers B-20 grinder one of the most efficient—yet economical, in industry. Any straight knife—whether chipper, paper, woodworking, doctor or other—can be precision handled. Set up is easy . . . automatic cross feed permits presetting . . . no experienced operator is necessary. Six sizes for knives from 66″ to 110″. Write today for further details.

A Leader in Grinding Equipment Since 1881

SAMUEL C. ROGERS & CO.

167 Dutton Ave. BUFFALO 11, N. Y.

FROM WOODS and MILLS

Fire of undetermined origin destroyed the sawmill operated in connection with the Port Alice plant of *British Columbia Pulp & Paper Co.* December 12, causing temporary interruption in pulp production. Steps were taken immediately to replace the damaged machinery and rebuild the structure razed by the fire.

John and Jack Weinert and *Stanley Onterkirk* of the *WOW Lumber Co.*, Lebanon, Oregon have purchased the *Eddyville Mill* at Eddyville, Ore. Jack Weinert will be in charge of this operation.

The Bracey Neal Lumber Company's sawmill at Amboy, Wash., was destroyed by fire in December. Loss was estimated at about $150,000.

Pope & Talbot, Inc., have moved into new offices at 3070 NW Front Avenue, Portland, Ore.

The sawmill on the Port of Willapa Harbor Terminal, between Raymond and South Bend, Wash., will resume operations under the name of the *Port Dock Lumber Co.* The plant was purchased from the *Golden State Lumber Co. Goddon Stine* will be manager. Some new equipment will be added. The plant will specialize in the production of surfaced 2x4s.

Coos Bay Lumber Co., Coos Bay, Ore., has declared a dividend of $3 on the common stock. Dividends for 1949 totaled $4 per share compared with $7.50 in 1948.

Charles Milne, who until his retirement four years ago, was Northwest manager for the *A. C. Dutton Lumber Corp.*, died recently in a Seattle hospital. He located in Seattle about 30 years ago.

Burr Odell has been appointed sales manager of the *West Coast Stained Shingle Co.*, Seattle, *P. W. Bailey* is owner of this plant.

The M. C. Miller Lumber Co., Cle Elum, Wash., which was swept by fire in October, has resumed operation of its planer and resaw. Reconstruction of the sawmill proper will be rushed so that it will be able to start sawing in the spring.

The old sawmill building of the Long-Bell Lumber Co., Dorris, Calif., has been purchased by *Herbert Gordon, Joseph Shelley* and *Clifford Sevits*, who it is stated plan a molding plant.

The Bush Lumber Co. of Seattle has purchased the assets of the *Lower Columbia River Lumber Co.* at Astoria, Ore., and plans to operate under the name of the *Astoria Lumber Co.*, according to W. *Frank Bush* who will be general manager.

L. E. Frederick, for many years prominently identified with the lumber manufacturing business in Seattle, died in late November at Indio, Calif. He located in Tacoma in 1907 where he operated a mill. He came to Seattle in 1920 to build and operate the *Duwamish Lumber Co.* Four years ago the company was dissolved. Mr. Frederick was active in Masonic circles.

Shevlin-Hixon Co., Bend, Ore., has taken out of service an 800 HP Corliss steam engine which has operated in the plant since it started 33 years ago. The company's plant is now completely electrified so that there is no longer any need for the steam engine.

The *Harry W. Olson Shingle Co.*, Granite Falls, Wash., was the high bidder recently for a block of 12,000,000 feet of Forest Service Timber in the Coal Creek watershed. The company bid $19 per M for the Douglas fir; $8 for the cedar; $3.75 for the hemlock; and $3.50 for the silver fir.

Lee Pearce has leased the Haskell shingle mill at Garden City, Wash.

A new circular head rig has been installed in the *Tubafor Sawmill*, Morton, Wash. This will enable the mill to saw logs up to 36 inch and is expected to increase the capacity to about 30,000 feet per day.

The I & S Lumber Company plans to install planing mill equipment on the Yaquina Dock and Dredge Co. pier, Newport, Ore.

LUBRICATION ECONOMY

LUBRIPLATE SAVES 7 TIMES ITS COST!

This remarkable saving was reported to us by the Wolverine Shoe & Tanning Corporation of Rockford Michigan. Their unsolicited letter stated—"*For every dollar we pay for LUBRIPLATE Lubricant No. 100 we save $7.00 in chain replacements*". You, too, can enjoy the savings made possible with LUBRIPLATE Lubricants.

1. LUBRIPLATE reduces friction and wear
2. LUBRIPLATE prevents rust and corrosion
3. LUBRIPLATE is economical to use

Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

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Fiske Brothers Refining Co.
Newark 5, N.J. Toledo 5, Ohio

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DEALERS EVERYWHERE, consult your Classified Telephone Book

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R. HOE & CO., INC.

SAWS & PLANER KNIVES

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Famous for edge-holding!

HOE

Solid Tooth Circular Saws

HOE Chisel-Tooth Saws

are ideal for easy maintenance

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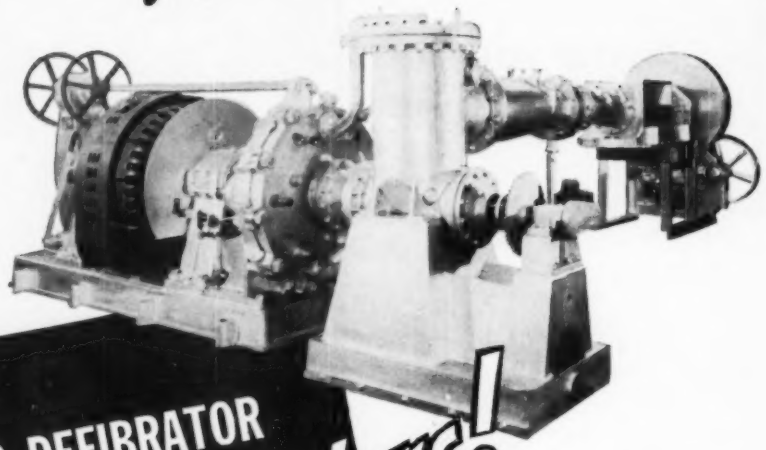

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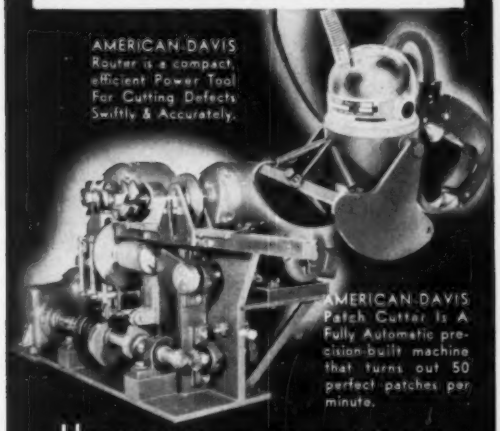
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JANUARY

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SAWMILLING INDUSTRY KEEPS STEP WITH THE TIMES

NEW MACHINERY AND PRACTICES ENABLE MILLS IN ALL PARTS OF THE COUNTRY TO PRODUCE BETTER MANUFACTURED PRODUCTS AND MORE OF THEM AT LOWER COST.

Despite the oft repeated statement that only loggers are progressive and that the logging end of the industry is the only spot in the industry where new and better machinery, equipment and methods are employed, the fact of the matter is that developments in the manufacturing end have been just about as spectacular as in logging.

The post war period and particularly the past two years has witnessed many new developments in lumber manufacturing, remanufacturing, and wood utilization generally.

Revolutionary developments have appeared in carriages, carriage drives, setworks, remote controls, etc. The new and improved equipment unquestionably results in better manufactured lumber. One well known sawmill manager tells elsewhere in this issue that his sawyers no longer saw on orders but to obtain the full value of the log. He says "sawyers, edgermen and trimmermen are trained as to values. They know nothing and care nothing about the order book."

One mill man in this issue commenting on new sawmill developments says that "the application of hydraulics to sawmill machinery is probably the most important forward step since electrification giving spectacular results as a means of variable feeds for trimmers, edgers, gangs, log hauls and many other places."

The use of air drives, air setworks and other air operated devices in sawmills and woodworking plants has been a new and major development. Operators who have used such equipment have found that its application saves costs and increases production.

A good deal of progress has been made in the last couple of years in the installation of chippers at sawmills. Such installations result in the production from waste into a readily salable product required by pulp mills. At every mill an amazingly large amount of material develops which is suitable for pulp chips. One Wisconsin mill found it could easily develop four carloads of chips per day. In so doing it was found possible to practically shut down its battery of boilers. It found it was more profitable to sell chips and buy electricity than to produce its own electric power.

One thing that sawmill operators want to see developed is a log barker. Progress was made in this direction during the past year. Barkers are in use at several mills. A notable installation was in a well known British Columbia sawmill. This installation is described and illustrated elsewhere in this issue. One commentator says in this regard, "One of the most interesting engineering developments in the British Columbia sawmill field during the past year has been the designing and successful operation of a new type of hydraulic barker."

One prominent southern pine manufacturer during the year started a major modernization program in his mill. Before undertaking this program the president of the company and some of his key men made a number of trips to other parts of the country including the Pacific Northwest, to see new equipment in operation and new labor saving devices. While this operator is a strong advocate of new machinery, he says "the very important thing lumber manufacturers are working on is improved layouts, as well as improved methods to obtain more complete utilization of their raw material." In this modernized mill there will be as little lumber as possible manufactured on the head rig but there will be very carefully designed devices for transfering material to and from resaws where the maximum in quality can be produced. This operator has already obtained better grade recovery and decreased costs. Further economies and closer utilization he expects will be obtained when the remanufacturing unit, still under construction, goes into operation sometime in 1950.

Elsewhere in this issue will be found some interesting information regarding the use of a stop watch in a planing mill. This manufacturer has found that efficiency of a machine can be materially increased by knowing just what the machine is doing. This executive says it is impossible to visually determine the feed and speed of a machine unless one has a suitable and accurate timing device.

One of the outstanding developments of the past year has been the increased interest in kiln drying. More new dry kilns were likely installed in 1949 than in any one year during the past twenty-five years. Throughout the length and breadth of the country, lumber manufacturers and remanufacturers have been installing modern kiln drying facilities. There has been a trend, particularly among smaller operations, to install unit package kilns. Modern front lift trucks lend themselves to this type of kiln.

Here and there operators have devoted attention to the use of infrared tubes in drying of forest products. Many operators believe this system has great possibilities and that its use will steadily increase.

Numerous new planing mill installations have been made in all producing regions during the past year. The planers of today with their push button controls, breechloading cutterheads, and automatic features, are a far cry from those of even five years ago. Likewise there has been improvement in facilities for bringing lumber up and taking it away from the machines. One such development is the traveling bed apron installed in front of a planer in a California mill. This provides mor oom for carrier units in front of th unloader hoist, results in easier, faster operations with a lessening of spillage and generally increases the efficiency of the plant by reducing machine time losses. Another planing mill development was the new type moulding machine having far greater capacity than older types.

In the field of increased utilization now a major objective in all well

(Concluded on page 103)

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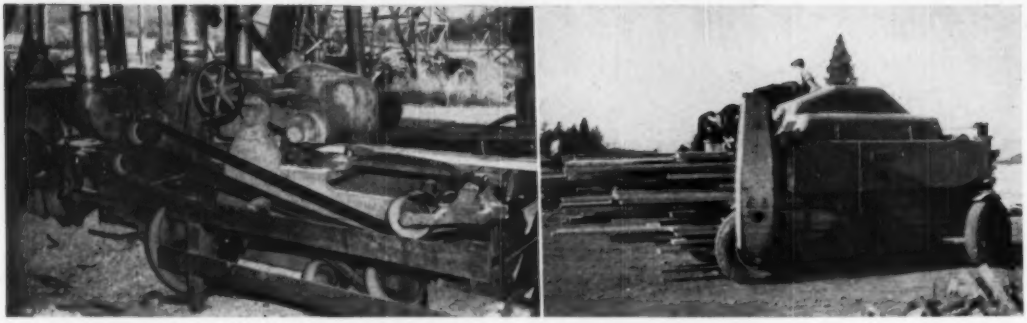


Left: Newman #501 8x16 planer-matcher, the principal processing unit in planing mill. Right: A Model 80 Ross lumber carrier speedily transporting lumber from green chain to lumber yard. Besides the carrier shown, two other Ross carriers, both model 70s, are included in the company's lumber transportation system.

REBUILT SAWMILL EMPLOYS MANY NEW DEVICES AND METHODS

The Neal Creek Lumber Co., Hood River, Ore., has been manufacturing lumber at its mill near Odell for several years. Early in 1945 the sawmill burned but the planing mill was saved from the conflagration. A new sawmill, of 60,000 board feet per day on one-shift basis, was subsequently rebuilt on the same site, resuming production in May 1948.

This company is a partnership organization including the following: Nelson Emry, general manager; George Emry, mill superintendent; Donald Emry, office manager; and David Browning. Key operating personnel, in addition to the partner owners, are J. E. Smith, sawmill foreman; Albert Johnson, millwright; Joe Moore, in charge of construction; and Fay Wiley, head filer.

This sawmill is electrically powered—no steam or boilers at the plant—has hydraulic feedworks, and is operated with view to extensive wood utilization.

Logs entering the mill from pond are reduced to cants by a Klamath Iron Works 7 ft. band headrig in conjunction with Monarch carriage, and subsequently processed by 8x 48″ edger and 21-saw 40′ trimmer, both Portland Iron Works machines, and a 60″ band resaw (no name).

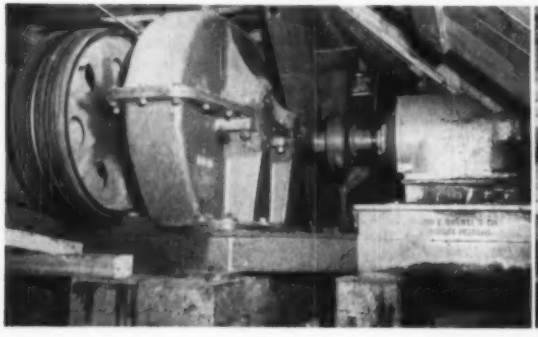
Here was installed the first hydraulic feed works in a sawmill on Pacific Coast, according to George E. Zweifel, president of George E. Zweifel & Co., which firm engineered, designed, and installed the unit. This carriage drive consists of a 60 h.p. Oilgear variable displacement pump delivering oil under pressure to a constant displacement Oilgear motor, the drive from which is transmitted through a Falk 17 to 1 reduction gear to a conventional carriage cable drum.

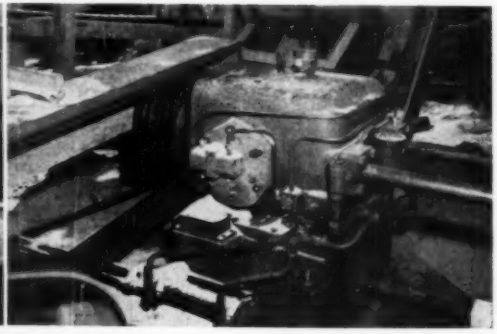
The oil pump is driven by V-belt drives connecting with distribution shaft powered by electric motor driving the headrig.

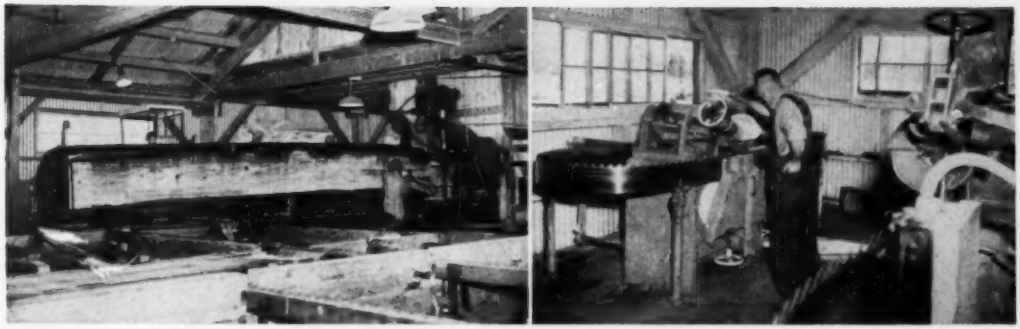
Decking logs from the pond with P&H shovel powered by Chrysler marine engine driving through Twin Disc clutch. This loader was purchased from Schnitzer Steel Products.

This feedworks has a wide speed range resulting from variance of oil volume from pump to motor—the Oilgear motor having speed range of 30 to 830 r.p.m. The sawyer's control lever is similar to the steam jockey-stick, having what the old-timers describe as "that good old feel." The

Left: In-put end of Zweifel hydraulic feedworks, showing V-belt driven 60 h.p. Oilgear variable displacement pump delivering oil under pressure to hydraulic motor. Right: Oilgear constant displacement motor driving carriage cable drum through Falk reduction gear—output end of the Zweifel feedworks.







Left: Canting a Douglas fir log at the headrig which involves Monarch carriage and 7' Klamath Iron Works band rig with a silver-tooth Hoe saw. Right: Fay Wiley, head filer, adjusting head of Estes resaw grinder; and at right on Armstrong headsaw grinder.

feedworks has 53% overload capacity, beyond which the pump cuts out automatically.

The carriage selected for use in this all-electric mill is a one-man Monarch Forge & Machine Works 60", 5 head block, completely air-equipped unit. Air, provided by compressor mounted on the carriage and air tanks built into the frame, operates dogs, air flippers, and an air pusher on the deck for moving log from deck back onto carriage as part of the log-turning process. This carriage, with one man doing setting, dogging, and tapering, has Andrus automatic electric set works and roller-chain knees.

With plan to wood utilization the mill was laid out so that small slabs and edgings drop off roll conveyors to the mill floor onto link transfer chain leading to slasher pit along center of the mill between the transfer to trimmer and the headrig. The bottom of this pit has wide-link chain leading to a swing slasher saw. While the saw makes a cut the feed chain remains stationary, then feeding in while the saw is in retracted position, the whole process carried on continuously and automatically. The resultant short-length pieces drop into conveyor leading out of the mill and discharging at top of a wood hopper from which the blocks are gravity loaded into trucks for local distribution as fuel. Lengths of the blocks can be pre-determined—12, 14, or 16 inch. The wood hopper consists of eight 2-cord bins. Slabs which are unavoidably large, such as those with burls or large stub knots, are reduced to block length with Irvington swing cut-off saw.

Sawdust from headrig, edger, and resaw is also salvaged by transport to a large sawdust hopper for subsequent distribution by truck.

Lumber coming from the band resaw discharges onto grading table connecting with head of green chain. Just behind the graderman, a run-around takes off for rerunning selected boards through resaw.

Primary processing unit in the planing mill, setting a short distance from the sawmill, is 8x16 Newman No. 501 planer-matcher. One lumber item at a time, such as 2x10, 2x12, etc., is run through the planer and pulled and piled from the grading chain according to both grade and length, thus eliminating services of full-time tallyman. Planer shavings enter an American Sheet Metal Works blower system as produced at the planer and transported to a shavings hopper, if currently marketable, or to an American Sheet Metal Works 40' burner for disposal.

The company uses a P&H shovel, powered by Chrysler marine engine driving through Twin Disc clutch, for decking logs from the pond on the banks, thus keeping the pond open to accommodate additional logs trucked to the pond and also storing up a supply to carry the mill over periods during which logging operations are closed down.

Partner owners of Neal Creek Lumber Co., from left to right, Donald Emry, office manager; Nelson Emry, general manager; George Emry, mill superintendent; and David Browning.

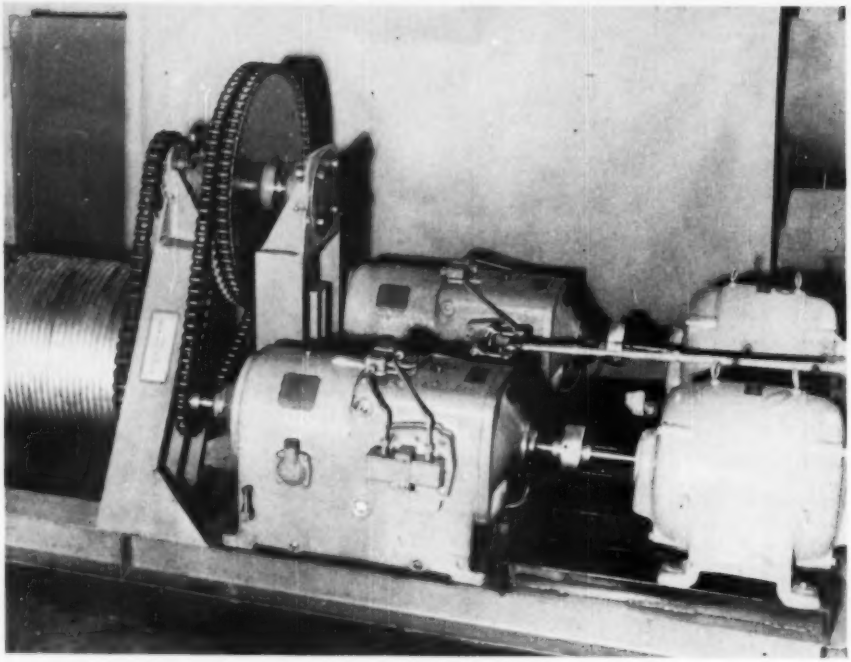
Sawmill Waste Study

C. F. McBride and K. W. Rymer, of the Forest Products Laboratory, Vancouver, B.C., have completed a survey on the utilization of sawmill waste for pulpwood, a development which has shown marked increase in recent years.

Summarizing the results, the survey points out: The average volume of solid material obtained from a cord of mill waste, handpiled, was 82.1 cubic feet. This consisted of 75.4 cubic feet of wood and 6.7 cubic feet of bark. A cord of the same type of material, mechanically piled, resulted in a total solid volume of 73.3 cubic feet, of which 67.1 cubic feet was wood and 6.2 cubic feet bark.

The average volume of solid wood obtained from a loose-cord of stovewood length waste was 60.4 cubic feet. The volume of solid wood per loose-cord increases as the number of pieces over 24 inches decreases.

The average moisture content of fresh cut hemlock was 115.6 percent (based on oven-dry weight) and a cord of this material weighed 4720 pounds. The average moisture content of a cord, close-piled in a yard for one year, was 33.8 percent and weighed 2860 pounds.



A Meter carriage drive using two Oilgear variable speed transmissions. This unit is in use at the Peterson & Vogt Lumber Co. Burney, Calif.

HYDRAULICS IN THE SAWMILL INDUSTRY

By
RICHARD E. DAVIS
District Engineering Representative
The Oilgear Company

The sawmilling industry, along with other industry, is engaged in modernizing equipment to speed up production, reduce manpower and produce a better product at lower cost. In this modernization program the use of the hydraulic transmission of power has played a prominent part. An increasingly important part will be played by hydraulics in the sawmill industry as its many advantages are understood. As in most other industries, the object of much of the modernization is to eliminate manpower by making machinery automatic. However, the sawmilling industry is unique in that a large amount of human judgment must be used in the manufacturing process.

Until our forestry experts can develop an ideal tree we must struggle along as best we can, employing human judgment in many of the crucial parts of the manufacturing process. A power source is therefore necessary to act as the "muscle" of the machinery, controlled by the operator who acts as the "nerves" and "brain." This power source must be easily and accurately controlled by the operator.

Hydraulics—"The New Muscle"

Steam and electricity have been the almost universal "muscle" in the larger sawmills. In the past few years, however, the hydraulic transmission of power has come into use in both large and small mills. In the larger mills the supply of available steam has been reduced due to lack of fuel caused by better utilization of waste products. This has resulted in a search for substitutes for steam. In their efforts to compete with larger mills, the smaller mills have also experimented with hydraulics.

The use of hydraulics is now past the experimental stage. For many applications it has proven to be a superior "muscle" to steam. This is because oil under pressure is easily controlled, and the working fluid is an ideal lubricant, so that wear in working parts is reduced to a minimum. Hydraulic systems are relatively low in first cost and are very low in maintenance and operational cost.

Hydraulic drives are easily built into machines making for a very flexible and easily maintained mill. Another advantage is that on rotary drives, the pressure in the system can be set to give a maximum pull which will not be exceeded. This makes it easy to protect the machine being driven against excessive overloads and prevents expensive breakdowns.

For best results, it is important that very heavy duty equipment be used to withstand the abuse normally received by sawmill equipment. Several manufacturers of hydraulic equipment have been suppliers to heavy industry for many years, so that extremely rugged and reliable equipment has been developed. It is also important to have the hydraulic system correctly engineered to suit the application.

Hydraulic sawmill applications can be roughly divided into two classes; reciprocating and rotary drives. Examples of reciprocating drives are: log turners, carriage dogs, carriage and edger setworks, carriage drives and miscellaneous lifting devices. Rotary drive appli-

cations include feedroll drives for gang saws, resaws, edgers and planers and conveyor drives of all kinds. Rotary drives are also used on carriage drives and setworks with excellent success, although these are essentially reciprocating applications.

Hydraulic Systems

All hydraulic circuits consist of three basic units, a pumping system, one or more motors either rotary or cylinder type, and control devices for regulating oil flow between pump and motor.

The following brief description of these three basic circuit units should help in understanding hydraulic sawmill applications.

Pumping Unit

The pumping system may be compared to the steam generating plant in a steam system. It consists of the pump, a reservoir, relief valves, filters and cooler if necessary. At times an accumulator is used to store oil under pressure in much the same way that a boiler stores steam. The pump is usually electric motor driven, although Diesel or gasoline engines are sometimes used. Most pumps used in sawmills are of the gear, vane or piston type.

The gear pump is the simplest and least expensive and is suitable for low pressures in the neighborhood of 500 lbs. per square inch.

The vane pump is intermediate in cost and is suitable for pressures of 1000 lbs. per square inch or even higher.

Piston pumps are relatively expensive, but are extremely rugged and dependable. They are suitable for pressures from 1000 to 3000 lbs. per square inch or higher. Piston pumps are made in both constant and variable delivery types. In the constant delivery type, the stroke of the pump is fixed so that the same amount of oil is delivered at all times. The variable delivery pump is arranged so that the piston stroke is adjustable, thus controlling the amount of oil delivered by the pump. Oil can be pumped from either of the two ports of the pump. Therefore, no separate control valve is needed to control the flow of oil in the system.

Motors

Rotary motors are also made in gear, vane and piston types. With all motors the speed depends upon the amount of oil supplied. The greater the flow of oil to the motor the higher its speed will be. Direction of rotation of the motor can be reversed by reversing the flow of oil to the motor ports.

The hydraulic cylinder is another type of motor and is used in the same way that cylinders are used in a steam plant. However, since hydraulic pressures are usually much higher than steam pressures, much smaller cylinders are required. Cylinders must be ruggedly built to withstand the severe treatment received in a sawmill.

Controls

Controls in a hydraulic system are used to regulate the direction and quantity of oil flow. In systems using constant delivery pumps directional and flow control valves govern the direction and amount of oil flow. Where variable delivery pumps are used no valves are needed as all control is done by changing the pump delivery.

Applications

Using the units described above, many types of circuits can be built up to suit the application. The following are typical sawmill applications illustrating the type of circuits in use.

Carriage Drives

The sawmill carriage drive, or feed works, is one of the most difficult problems in a sawmill and is one which has been solved by hydraulics. One of the best solutions makes use of a variable delivery pump and a rotary motor driving the carriage through a speed reduction means and a cable drum. A lever on the side of the pump controls the amount and direction of flow of oil from the pump. The speed of the motor, and therefore carriage speed, depends on the amount of oil supplied to the motor. The pump control lever is connected to the sawyers lever by a suitable linkage. Thus the sawyer can, with very little effort, control the carriage speed from zero to maximum in either direction. During carriage reversals a special control on the pump automatically adjusts the flow of oil to suit the changing speed of the carriage. Reversals are extremely smooth and free from shock. The control of cutting speed is very smooth and accurate from zero speed right up to maximum.

Over thirty such drives are in use in the United States and Canada. In nearly every case, the installation of the drive has resulted in increased production ranging from 20 to 50%. This has been due to—

1. Elimination of breakdown and maintenance time.
2. To the fine speed control which the sawyer has allowing him to select the correct speed for each cut.
3. To the lessening of the work required by the sawyer in moving the control lever.
4. To increased carriage speeds obtainable.

The quality of lumber is also improved because of the smooth control obtained.

For compactness, the pump and hydraulic motor is sometimes built into one unit called a "Variable Speed Transmission." The illustration shows a carriage drive assembly using two such transmissions in parallel.

Another similar carriage drive system uses a variable delivery pump as described above and a cylinder driving the carriage through a cable multiplier. This type of drive gives performance similar to a drive using the rotary motor.

The experience gained with drives using variable delivery pumps has made it possible to predict quite accurately the number of lines per minute which can be obtained with a given sized drive. In general, the greater the carriage and log weight is, the higher the horsepower must be to obtain the required cycle time.

The selection of the reduction ratio between the oil motor and the cable drum is very important. On some of the early hydraulic drives installed, the ratio selected gave too high a top speed, resulting in very sluggish performance during starting and stopping. By changing to the proper ratio, performance was greatly improved. The overall cycle time per cut was decreased and production increased due to the shorter time required for reversals. A mathematical formula was developed to determine the proper ratio for best performance based on carriage weight and drive horsepower. The formula was found to be accurate by timing actual installations before and after changing ratios.

Probably the most promising solution to the carriage drive problem uses a variable delivery pump with a long stroke cylinder driving the carriage directly as in a steam shotgun. It is quite practical to use pumping systems of several hundred horsepower in which case performances comparable to steam shotguns can be obtained with controllability which is superior to that obtained with steam.

DETERMINING SPEED AND FEED WITH THE STOP WATCH

J. C. Rassenfoss, president and manager, of the Pickering Lumber Corporation, Standard, Calif., one of the most progressive operations in the West as well as one of the most modernly equipped, tells below of an interesting use of a stop watch in the planing mill and box factory and other departments in accurately and quickly determining the feed and therefore the performance of individual machines. Discussing this Mr. Rassenfoss says:

"One thing we developed here, at least I hayen't seen it elsewhere, is to have an accurate check on the feed speed of planing mill and box factory and other machines. Nowadays modern machines are equipped with speedtrols, or other variable speed devices. I have noticed here and in a lot of other plants I have visited that, for instance, a planing mill resaw will be run at the same feed speed for 6", 8" and up to 12", whereas of course for the narrower stock, the machine should be fed faster. The variable speed is intended to meet this problem, but it is most difficult for the machine operator to visually determine accurately, regardless of the years of experience, how fast a machine is really feeding, unless one has a suitable and convenient timing device. I have taken an ordinary $10.00 stop watch and pasted on the back of it, covered with a piece of Scotch tape a little chart, of which the following is a copy—

Sec.	Ft. Per Minute
2	480
3	320
4	240
5	192
6	160
7	137
8	120
9	107
10	96

"The first column of figures is seconds for a *16 Ft. board*. The second column is the feet per minute the machine is feeding. For instance, if a 16 Ft. board goes through a machine in 6 seconds, the machine is feeding 160 feet. If it goes through in 2 seconds, the machine is feeding 480 feet. Between the various classifications, for instance, 4½ seconds, the speed would be between 4 and 5 seconds, or namely, 216 feet. I always carry such a watch with me. I stand along side the machine and with the watch in my hand I check the time and then read the scale. That tells me immediately at what speed the machine is running. Each of our foremen are supplied with such a watch. It is surprising what this has accomplished, because the foremen know exactly the speed the machine is feeding, and we have set up certain standards for certain machines for certain material, and with the aid of this little contrivance the operator and we have a convenient and immediate check on performance.

Practically every plant operator I showed the watch to immediately arranged to buy one. There are many expensive contrivances one can put on machines, but it seems they always get out of order and they are very costly. A $10.00 stop watch takes the place of equipping every machine in the plant with a feed recording device."

TREND TOWARD LESS MANPOWER IN SAWMILLS

"There have been many changes in sawmill layout, machinery, and operating methods in the Midwest in recent years," says J. W. Creighton, Assistant Professor of Forestry, Department of Forestry, Michigan State College, Lansing, Mich. "The trend over a period of time has been away from the large centralized manufacturing plant until at present there are only a very few left and most of these are located in the northern part of the Lake States. Most of the lumber manufactured in the Midwest now comes from small sawmills with a capacity of 5 to 15 thousand feet per day. Many are portable. There are few large tracts of timber left so much of the timber must come from scattered farm woodlots.

"Improvements in these small mills are necessarily slow in coming, because of the fact that the cost of new machinery and method changeover must be charged off on a small output. As a result the change must be relatively inexpensive, and sure to effect a saving before the operator can afford to take a chance on it. Very often the operator must see a device work before he is willing to try it out for himself.

"The good market of the war and post-war years and the rise in labor costs have made operators much more improvement conscious. At the present cost of labor any device which will boost the production per man hour, or permit the cutting of the payroll immediately strikes the fancy of the efficient operator, and whether or not he decides to use it depends largely on its cost.

"It must be noted that for cutting northern hardwoods efforts toward improving quality of the product might be equally as important as cutting the payroll or boosting the man hour output. This is a point not realized by many operators who seem to be in an everlasting hurry to cut poor lumber. Improvement of quality is largely a matter of education and repair of equipment but there are new devices which can help. Among these are (1) taper sets which will permit the easier setting of one end of a log on mills where the sawyer sets blocks, (2) simple, accurate and easily visible indexing devices which facilitate accurate block setting and which are particularly valuable in mills where many thicknesses are cut, and (3) edger guides. The exact lines which the edger saws will follow on a board are hard to determine. Light guides which project a shadow on the line of the saw cut can effect a great saving each year, not only in lumber saved but in grade improvement.

"There are many labor saving improvements. Automatic power set works, air dogs and tapers and power receders are now available even for portable mills. There is a great swing on the part of the operators and therefore the equipment manufacturers toward automatic machinery.

"Another trend becoming more and more evident is for custom sawing to be done by mills designed specifically for this purpose. Several mills are now manufactured that are built on wheels and can be set up and sawing in a new location within an hour's time. Custom work has in the past been a considerable part of the work of many marginal operators. It appears that they now have some very stiff competition."

NEW SAWMILL LOG BARKER ONE OF THE MAJOR DEVELOPMENTS IN BRITISH COLUMBIA IN 1949

One of the most interesting engineering developments in the British Columbia sawmill field during the past year has been the designing and successful operation of a new type of hydraulic barker at the big Canadian White Pine Co. mill on the Fraser River.

Similar barkers are to be installed in the near future at Nanaimo Sulphate Pulp Ltd., the new kraft mill being built by the H. R. MacMillan organization on Vancouver Island, which will be in production next summer, and at Victoria Lumber Co., the MacMillan mill at Chemainus.

The barker represents a distinct departure from other hydraulic barking methods. It is notable for its low initial cost, the comparatively low horsepower consumption, reduced requirements of water, freedom of damage to the log and mechanical simplicity.

The machine was developed by Howard A. Simons, Vancouver consulting engineer.

Water used in the barker is pumped from the Fraser River and after being used as a cooler in the steam condensers is screened through 15 mesh wire, then pumped by a 25 h.p. pump through a battery of four -4 vortraps, each having a capacity of 200 gallons per minute. The injection of the water into the vertical column creates centrifugal separation, the silt settling into a receiver, thence to the sewer, the clean water passing on to the next pump.

At this stage is a 150 h.p. centrifugal which raises the 15 lb. pressure output from the vortraps to 250 lbs. per square inch. The water at this pressure is fed into an eight-stage Bingham pump where the pressure is raised to 1450 lbs. per square inch. This pump is direct-coupled to a 3600 RPM steam turbine which, pumping 600 gallons per minute at 1450 lbs. pressure uses 12,000 lbs. of steam per hour, and is developing approximately 800 h.p.

To protect the pump from "burning out" and the turbine from "running away," an ingenious control was devised through the combined efforts of Mr. Simons' engineers, Pacific Controls, Ltd. and Canadian White Pine Co. engineers. A drop in input water pressure operates an electric solenoid which snaps off the steam to the turbine and opens a vacuum valve. A push-button at the barker is wired into the same solenoid, so that should an emergency arise the barker operator can instanty shut off the hydraulic power unit.

From the Bingham pump in the power house this great moving force of high pressure water must be carried through six inch heavy hydraulic pipe under the "B" mill to the upper floor of the adjacent "C" mill, a distance of 400 feet and around eight right-angle bends. All joints in this pipeline are electrically welded.

The debarking unit straddles the log haul, one head unit above the log and one below. Each unit consists of a pair of nozzles, one mounted at each end of a header welded to a tubular shaft into which the water is delivered.

The shaft is rotated by V-belt drive from a D.C. variable speed motor. The effect is that as the pair of nozzles is spun on a horizontal plane, the log being carried past the jets receives the impact of the water in a progressive circular pattern. The upper head is raised and lowered to suit the size of the log by a hydraulic motor.

Considerable research was expended in finding the various combinations of size and type of nozzles, gallons of water per minute, water pressure and speed of nozzle rotation. At a fixed speed of log haul, the bark and cambium layer is all cleanly removed with no damage to the wood.

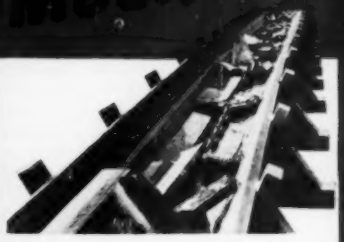
The bark, now a clean fuel by-product, is carried by conveyer to the boiler house. The sawmill has a clean log to cut into lumber with reduced wear on saws and all equipment, and all slabs and edgings too small for lumber can be put directly into chips for wood pulp.

It is understood that hydraulic barkers of a similar type, probably somewhat larger and more powerful, will be installed at the Nanaimo Sulphate Pulp mill and Victoria Lumber Co., another MacMillan subsidiary operation at Chemainus.

One advantage of the Simons barker is its safety in operation. Only one man is required to operate it through manipulation of a few valves and levers. The machine is well covered and has a self-closing log entrance and exit holes.

The Simons hydraulic log barker in operation at the "C" mill of Canadian White Pine Co. on the Fraser River. Eddy Toebaert is the operator shown here.

CHAIN THAT FITS EVERY LUMBER NEED



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Jeffrey gives you both, but Jeffrey also offers over half a century of chain-making experience plus constant study of the needs of the lumber industry.

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POST WAR TRENDS IN RURAL SAWMILL OPERATION IN THE CENTRAL STATES

RALPH K. DAY
Primary Forest Industries Specialist
Forest Utilization Service
Central States Forest Experiment Station, Columbus, Ohio

Nearly 40 per cent of all commercial forest land east of the Rocky Mountains is in farm ownership. The total involved in such holdings is in excess of 130 million acres. The productive capacity of these farm woods in many areas is being steadily lowered through fire, overgrazing, and poor utilization and management practices, including necessary but severe overcutting during the war and immediate postwar years.

Studies made by the Central States Forest Experiment Station for the War Production Board and the Civilian Production Administration showed a consistently increasing production of lumber from these small rural mills throughout the period 1942 to 1946, in the face of a steadily downward trend in production by larger commercial mills during the same period and a similar downward trend with respect to national production.

At the close of the war, there was almost unanimous agreement that a large number of the small rural mills would be forced out of business as soon as normal trade channels were filled. While this prediction was filled with respect to the many noncommercial and small custom mills, catering exclusively to the farm trade, sampling studies in several of the central states indicate no such trend in the large number of small rural mills whose products enter normal trade channels. While total production has fallen off from the postwar peak, the number of mills in the group producing from 500 to 999 MBF annually has shown no significant change in any of the Central States.

Unquestionably, of course, a major factor in this surprising situation has been the continued favorable price situation in nearly all species and grades. There are, however, many indications that other factors may be as important, or more so, in what appears to be the reestablishment of an increasingly stable and profitable rural sawmilling industry over most of the Central States.

A survey of 98 small rural sawmills in the Central States, made in 1944, showed that equipment was largely obsolete, practically all edging was done on head saws, management-labor relations were at a very low ebb, grading and sales efforts were poor, and there was little interest in major capital investments or in building toward a permanent industry.

While no comparable statistical study has been made recently, contacts with many of these identical mills and with other rural mills in the 500 to 999 MBF annual production class indicates a much improved situation. There is a distinct atmosphere of good business management at the more progressive plants.

Capital investments in equipment indicate a healthy, prosperous and seemingly permanent industry, employee-employer relationships are much improved and community standing of both sawmill operator an worker is uniformly higher.

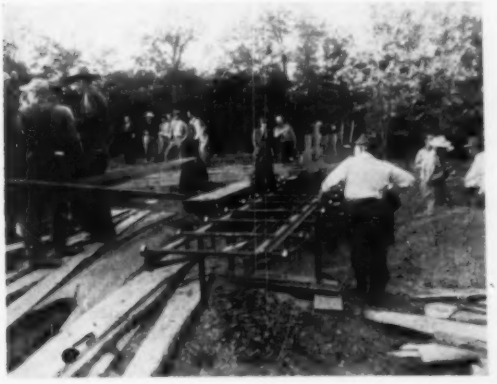
Many operators, while continuing to operate portable mills in the woods, have set up small plants in community centers for remanufacturing lower grades into pallets, small dimension, or other products returning higher yield than No. 2 or 3 common lumber. There is much greater interest in meeting NHLA grade rules.

This remarkable resurgence of a down-at-the-heels industry in the matter of a few years is probably best illustrated by the response of rural sawmill operators to the logging and sawmilling equipment demonstrations which have been held the last two years; last fall in Illinois, and this fall in Ohio. A trend toward lighter and highly mobile mills is especially evident among rural sawmill owners.

Several models of truck-mounted sawmills are now on the market which can be set up profitably for a cut as low as 10 MBF.

These mills not only appeal to the farmer but they also appeal to the more progressive commercial operator who uses them in the woods as a headsaw rig, moving the rough lumber and high quality cants to his more permanent mill for resaw, and for further processing of the lower grades.

Other important trends observed in the rural sawmill industry are towards greater electrification of the plant, more efficient use of labor through modernization of plant layout and labor saving equipment. For production of a more salable product many operators are installing edgers and planers, and acquainting themselves with modern merchandizing methods to intelligently know what will sell at the better prices. Inquiries are being received constantly concerning the practicability under rural sawmilling conditions of new products on the market, such as: automatic electric, hydraulic, and pneumatic carriage devices; gang saws, both sash and circular; edgers mounted ahead of the head saw, shadow line edging; bolter saws, both for production of small dimension, and as a light inexpensive and highly portable rig to reduce woods waste; automatic slab saws, trailer mounted edgers and surfacers.



Portable mills are being used more and more in the important farm wood lots of the Central states. Farmers are here shown witnessing a sawing demonstration.

MODERNIZATION PICTURE IN THE NORTHEAST

Of all the major U. S. lumber and wood-products areas the Northeast offers the biggest opportunity for improvement. Unlike the South, the Midwest and the Far West, this region has only begun to enter a modernization phase. Although there are mills which are notable exceptions they only prove the generalization, and also indicate the beginning of a trend. New England and upper York State mills are finding themselves caught up in a general effort at industrial revival. The story of the area industrially is well known. Once past the peak, it found itself steadily losing ground, competing with cheaper labor in the South, and its market—once easily regional in scope—drawing away South and West. True, this was more the fact in textiles and paper manufacture and ironworking than in lumber, for the heavily populated areas converging on Boston and Philadelphia and New York still represent one of the great lumber markets of the world.

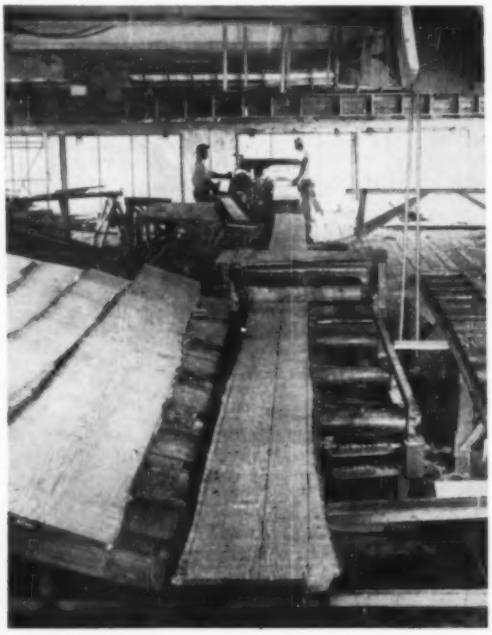
Yet the sawmills and planing mills of the area fell into the general lack of interest in modernization. If there has been a dearth of new equipment in the Northeast that is really new in design and revolutionary in purpose, it is possibly the fault of the industry rather than the equipment manufacturer—this The LUMBERMAN field editor was told in candor by mill managers themselves. "As long as the mills ran we let 'em run," one manager said, "and some have really been going along about the same for fifty years."

J. E. Duffey, vice president in charge of lumber manufacturing for Diamond Match Company, put it another way. Although his headquarters are in New York, across the street from The LUMBERMAN's office there, his view of the industry takes a very big frame because the operations of Diamond Match are far-flung. "I think it can be said," he told this magazine, "that there has been far less improvement shown in sawmill and planing mill equipment than in equipment and machinery for other phases of the industry. Logging equipment and road machinery equipment are examples." Naturally Mr. Duffey made an exception of sawmill and log handling equipment, much of it specially made, in the Far West and Midwest; and also noted improvements in individual Southern operations where, although size of timber could not compare with other areas of the U. S., there are good examples of swift and economical production. In looking at the U. S. as a whole he agreed that on the average the Northeast mills could stand the most improvement. "The ordinary sawmill and planing mill equipment has not changed basically for a very long time," he said. "Of course, there are changes in design for safety purposes, more dependable motors, improved drives, faster operation—perhaps changes in bearings to enhance maintenance—but only a few of the changes and newer machines have introduced any basic transformation which would in turn introduce a new method or process of manufacturing at any given point from log pond to finished lumber."

Mr. Duffey wished it made clear that he did not want miracles, that he believed the equipment designers and manufacturers have done the best job thus far possible. If there were shortcomings, he said, they might well be because the mill men themselves had been interested only to the extent that a piece of equipment was the latest type available, at a reasonable initial outlay, to do the job as fast or faster than the old machine. Recognizing the vast improvements made in sawmill engineering, in structures and working conditions and in log and finished product handling, Mr. Duffey said his company makes a continuous study of every new type of equipment that appears on the market.

That the Northeast is now alerted to new ideas was shown when recently a shadow-line guide with individual light and shadow bar for each saw was introduced under Horstkotte permit by the owners of R. C. Bennett Box Company of Ahoskie, North Carolina. This firm, also operating The Colony Pine Company at Ahoskie, (and with offices in Jersey City) has been appointed sales representatives for the equipment in the area east of the Rockies. This particular type has been operating successfully in the West for some time. But while there have been similar guides in the east it is claimed that this is the first automatic edger guide wherein the guide lines move as the saws move. The success of the equipment at Ahoskie led to other installations and is proof of the contention that the Northeast is ready for new ideas in equipment when they claim lower costs in a competitive market.

(Concluded on page 105)



The Edgerlite is a device which is used in conjunction with a sawmill edger and operates from a series of levers which directs an overhead projector. The projector casts a line on the board to be cut and shows exactly the path the saw will cut. Any adjustment in the position of the saw will automatically bring about a correspondent shift in the position of the projected line.

LOGS SAWN FOR VALUE ONLY

BY GORDON J. MAUARY,
Resident Manager The Pacific Lumber Co., Scotia, Calif.

It is to be assumed that all new woodworking machinery appearing on the market has incorporated into its construction, improvements which are the result of engineering progress. The driving power behind this constant engineering progress is of course the knowledge that successful lumber manufacturers must through necessity, be ever on the alert for new means of producing better manufactured products at a minimum cost. This is perhaps more true today than during any other period of our industrial history. During the late war and post-war periods the lumber industry enlarged many fold. The demand for wood products of every description was so great that even quality of manufacture was not an important consideration in the placement of orders. Quantity and delivery were the prime considerations. Even those companies who endeavored to maintain pre-war qualities of grades and standards were unable to do so because of war hysteria pressure.

With the return to a greater degree of economic normalcy, and lumber inventories again approaching pre-war balances, responsible manufacturers foresee an early return to a highly competitive lumber market. A market where high standards of quality combined with conscientious price structures and top customer service will be the only medium of permanent survival.

To accomplish these things in the face of inflated costs such as labor, materials and taxes, manufacturers must constantly be on the lookout for better tools, machinery and equipment. They must create better working procedures. They must strive for greater utilization of their raw products. The elimination of waste in every form.

In our own company we are no longer sawing logs to orders. Logs are sawn for value only. Sawyers, edgermen, trimmermen in the sawmills are trained as to values. They know nothing and care nothing about the order book. This same rule applies to every other plant operation. We stress the manufacture of vertical grain redwood lumber because we know it is a superior product.

The band saws on our head rigs are of thinner gauge than usually found in an orthodox redwood band mill. This appreciable saving in kerf waste is more than a minor factor in our program of greater utilization.

Much advancement has been made in recent years in the application of electronics in lumber operations, electronic gluing for example. Also in the manufacture of precision high speed machinery such as matchers, resaws, etc. The use of electric driven carriages for head rigs and many other evolutionary improvements can be directly credited to engineering progress.

The days of bull strength and brawn in the lumber industry appears to be a thing of the past. Engineers have taken over.

"APPLICATION OF HYDRAULICS

MOST OUTSTANDING DEVELOPMENT SINCE ELECTRIFICATION"

"The postwar period has confronted the lumber industry with the necessity of achieving greater efficiency or the ultimate alternative of going out of business," states *D. W. Brooks*, engineer, sawmill division, Bloedel, Stewart & Welch, Ltd., Port Alberni, who visited Scandinavia during the past year to survey sawmill operations.

"The term 'efficiency' is used in a broad sense. It embraces operating costs and the value of conversion of the raw material. The development of the whole log hydraulic barker in its several forms has helped to make total recovery an actuality for some operators and is the chief means to that end, being developed by many others wherever conversion of sawmill waste for pulpwood is practical.

"The present-day requirements for maintaining a high sales average is inevitably reflected in lowered production volume. At least a partial solution to this dilemma is more and better equipment.

"The present-day sawmill has come a long way, engineeringwise, from the old line shaft, belt-driven mills, but the evolution has been gradual. Postwar trends were, in the main, started before or during the early part of the war and were subsequently left, apparently dormant, for reasons that are well known, until the end of hostilities.

"The application of hydraulics to sawmill machinery is perhaps one of the most obvious developments since the electrification of mills. This powerful and flexible means of power transmission has many useful applications in a sawmill. It is being used with spectacular results as a means of variable feed for trimmers, edgers, gang and log hauls.

"Successful installations of hydraulic carriage drives are in use. An application which has not as yet been exploited here is that of a remote finger-tip control for the setting of edger saws through the use of "Servo" valves. This is a development which has been in universal use in Sweden for many years and is standard equipment with the most popular make over there.

"One portable mill viewed by the writer is completely hydraulic with the single exception of the head saw which is coupled directly to a gasoline engine. This mill included a 'no man' carriage with the setting being done by the sawyer operating a 'pre-setting' hydraulic set works.

"The postwar years have seen many whole log gang saw installations for the more efficient liquidation of the smaller logs. In fact, in some cases quite fair-sized logs are being cut by this method. In general, the trend would seem to be towards smaller high speed mill units. The emphasis on high speed machinery has caused the mill and machinery designer to make use of certain technological advances in metallurgy. Some of these are comparatively recent, such as the use of cemented carbide for moulder knives, etc. Others are not quite so recent, such as the use of manganese alloys for fast log-haul chains. Modern high-speed machines show definite evidence of the better use of anti-friction bearings and recent advances in lubrication technology have helped to solve many a maintenance problem and opened the way to a new approach for the machinery designer.

"As the efforts of more and more of our technically trained minds are directed towards the improvement of old accepted practices in the industry, many new developments may be expected in the never-ending search for means of increasing production without sacrifice of quality or vice versa.

First in the field in every way, the International TD-24 is the only crawler that gives you these features:

- *Eight Speeds,* forward and reverse—matched to every operating need.
- *Synchromesh Transmission,* for easy on-the-go shifting, cuts waste shifting time almost completely out of your cycle.
- *Planet Power Drive* gives you power on both tracks in a turn for magic maneuverability *plus* an instant shift up or down one speed in both high and low range.
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No other crawler tractor has *any* of these profit-building features that shrink your costs of operation. Like every operator who has applied the seat of his pants to the comfortable cushion of the TD-24, you too will say, "It's a log-lugging demon—no other crawler can compare with it."

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POINTS TO NEED OF PRACTICAL SAWMILL LOG BARKER

"I would like to be able to theorize on the topic of changes in sawmill machinery and also changes in planing mills, if I had anything to hang my hat on, but the truth is that I am not aware of anything new in sawmill machinery nor even in planing mill machinery insofar as it pertains to the lumber business," says *Walter S. Johnson*, of San Francisco, president of the American Box Corporation, which operates a number of mills in the West. "For instance, I do know that some study has been given by sawmill men as to how they can remove bark from logs before bringing them into the sawmills, but I am not sufficiently informed to say that anyone has yet devised a means of doing this that is actually practical. One can visualize the enormous benefit to sawmill operations if the bark of a log could be removed before entering the mill. Even slabs would have greater value because much more salvage could be obtained from them for small items of recovery than what is now practical to do.

"The fir operators of the Northwest may have made improvements in their sawmilling that I know nothing about but insofar as the pine areas are concerned we have not conceived anything better than a good roller bearing head rig and good carriage equipped with air dogs, fast shotgun and a roller bearing edger wide enough and properly powered to take care of the cut of the head rig and also a resaw if one is installed. However, I do think if some mechanism is devised that will remove the bark, preferably out in the woods, it would be a big step forward in our industry.

"As for planing mills, the principal improvements have been methods of conveying materials to and from machines such as lumber carriers, lift trucks, feeding devices and conveyors. These seem to be made in accordance with the needs of each operation and are usually planned out by plant superintendents or plant engineers. No particular new feature that I know of has been created recently but many new devices for handling have been installed with substantial savings to the industry concerned.

"A good many attempts have been made to find better methods of drying lumber than the present dry kilns operated with steam. Most of these have been planned around the idea of drying through electrical processes such as infra-red lamps but so far the expense does not warrant such an installation although I do believe sooner or later the drying of lumber through electrical heating will be accomplished on some proper mechanical application that will speed up the drying and do it at less cost than is now being done with our standard steam kilns."

NEW IDEAS IN MACHINERY AND METHODS VITALLY NEEDED

"The sawmill industry is sadly in need of some new and unshackled ideas for the improvement of the so-called 'modern' sawmill," says *Elliot H. Jenkins*, president, Booth-Kelly Lumber Co., Eugene, Oregon. "I think—as an example—that the logging branch of the industry has shown a very definite improvement in its equipment and methods as compared to the lumber branch of the industry. I do not think this can be wholly blamed on the designers of sawmill machinery, because I think sawmill men are to be blamed for their lack of vision and initiative necessary to develop new machinery and methods.

"Traditionally sawmill people have been badly handicapped by three things:

"(1) Too many sawmills are operated by people who either do not have the over-all knowledge of lumber manufacture themselves or it is not obtainable in their own organization. Having to depend on machinery house designers or sawmill engineers who are not closely enough associated with the operating problems, does not lend itself to practical solution to many of the problems that exist today in sawmills.

"(2) Because their forefathers did things a certain way it has to continue being done that way.

"(3) So much of the major machinery installed in sawmills was designed by large Eastern concerns who had no conception of what the problems were, or interest in solving them.

"As to the future, I believe as competition gets more strenuous the industry is either going to have to get in and really come up with some new ideas or fail to maintain its position in the field."

TEXAS MANUFACTURER PREDICTS IMPROVED TECHNIQUES

"In my opinion," says *Arthur Temple, Jr.*, of the Southern Pine Lumber Co., Diboll, Texas, "engineered construction and production in the lumber industry of the South represents the great 'white hope' of our industry. For the first time, instead of just starting out to build a mill and let it grow helter-skelter, lumbermen are seriously spending years of planning prior to construction of production facilities. Engineering, in my opinion, is going to work a revolution in the method of lumber manufacture throughout the South.

"The day of higher wage scales has only begun in this region and, therefore, economic pressure has already forced the larger operators to carefully scrutinize their facilities with an eye to efficient in-line production. Terrific pressure is being exerted for improved techniques of manufacture and even now beginnings are being made toward that goal. I would not be surprised if war-developed electronics and chemical processes will eventually find their application to our manufacturing industry.

"I believe the southern manufacturer in the future will aim toward a small in-line, mechanized plant which will require a minimum of upkeep with a maximum of production per manhour and I believe that the operation of the future will be designed to run around-the-clock seven days a week, thereby producing as much as the more expensive larger layouts that we see today.

"I believe our industry is at the threshold of an era wherein it will no longer need to blush at its lack of advancement, inadequate construction, medieval employment practices, paternalistic management policies, and low wage rates."

TREND TOWARD CUSTOM SAWING IN MIDWEST

Fred C. Simmons, Forester Forest Utilization Service, Northeastern Forest Experiment Station, Upper Darby, Pa., who last year wrote a report on new developments in sawmills, summarizes his ideas on trends in sawmill equipment and practices as follows:

"I was amused by The LUMBERMAN'S recent "No-man Sawmill, Employees Keep Out" cartoon and have told several audiences about it, including the United Nations Conference. The trend toward less use of manpower in sawmills is, to my mind, the most significant development now and in the near future. We now have several so-called "one-man" mills in the East. We're going to have more, including more automatic devices and greater accuracy and flexibility.

"The most generally useful type of mills in this section, I believe, are going to continue to be the circulars, with a carriage moving back and forth to make one cut at a time. Our timber is tremendously variable, and is becoming more so.

"Sawing to grade is becoming more and more worthwhile, even for the very small mill.

"Round log gangs have a place, but for the near future it will be a minor one, I believe, sawing products such as box and crating stock from young trees obtained in thinnings or from top logs, which have very little grade in them in any case. Bands are too temperamental and costly to maintain, and lack the necessary portability, in their present stage of development. Circulars are becoming tremendously improved tools, and are destined to be further improved.

"I believe there is a trend, as our timber becomes more scattered, smaller, and more variable in quality, to do more of the initial sawing on highly portable rigs in or close to the woods, and then take their product in the form of cants or flitches to a remanufacturing or dimension plant in town. New loading equipment that can be used at the field installations is helping this along. A tremendous saving in transportation bulk and weight can be realized. At the central installation accurate resaw equipment, together with sorting, grading, kiln drying, finishing and marketing facilities can be provided. Some of our oldest and biggest lumber concerns are adopting pretty much this method of operation. The New England box industry has been pretty much on this basis for years with its two inch round edge plank."

TREND TOWARD MOBILE PORTABLE SAWMILLS

The long term trends seem to vary regarding sawmills, according to *L. E. O'Neil*, mgr., Forest Products Co., Kalispell, Mont. He says: "On one side there is the portable mill which is gradually becoming more mobile in order that it can be moved often to pick up scattering tracts of timber. The Jackson lumber harvester which is mounted on wheels and can move for only a few trees is an example of this trend. On the other hand I feel that there will be more development of permanent mills not too large and located at railroad locations. In these mills better machinery will gradually be used. For instance ball or roller bearings will often replace babbit bearings, heavier equipment which will need less repairing will be used, more room will be made in sawmills to allow some lumber storage enroute between machines in order that a temporary stoppage of one machine will not affect the rest of the mill.

"Since the war there have been quite a number of resaws and gangs added to sawmills in order to increase capacity without materially adding overhead. Small Swedish gangs are used as cant gangs or for very small logs. Sometimes these cants are purchased from portable mill owners. Resaws add to production by allowing headrigs to make fewer cuts and also save saw kerf by use of finer gauge saws.

"There is need for better equipment in all phases of manufacture. Of course most mills do not now use the best equipment obtainable but some of the finest equipment is out of reach for the majority of mills due to the price. As the more modern machinery is made in mass production for medium sized mills instead of on more of a custom basis for fewer large mills the price will become adjusted to the mill's ability to pay.

"The items mentioned in the long term trends are tending to reduce costs and still improve the quality of the product.

"Serious production problems are being caused by the buyer's market because many mills lack stock and facilities to get out lumber for badly mixed cars as it is being required. Specified orders with many items requires either a great deal of sorting before planing and then planing many items for one car with much lost time in setting up or it requires planing much lumber which does not go on a particular order and storage of the 'outs' until it can be sold later. In general we feel that the latter procedure is the least expensive although to date in our operation it requires high cost hand labor in shed storing the 'outs' while that part which cannot be stored under cover promptly is often damaged by weather conditions. Larger shed for lift truck stacking seems the logical answer as rapidly as the mills can finance such an operation."

SMALL MILLS NEAR TIMBER GROWING IN IMPORTANCE

John L. Aram, manager of the Manufacturing Division of the Boise Payette Lumber Company, Boise, Idaho, in giving his opinion as to late trends in sawmill practices and machinery says:

"Due to the widespread area from which the logs must be taken, the trend is toward small mills for sawing with a minimum of manufacturing being done at that point, the product of the small mill being shipped to larger plants for resawing and trimming and further processing. I believe there is need for a new approach to small mill installations to avoid the high waste created at these plants due to the circular saw and other inadequate machinery. Likewise, most of the small plants experience costs that are higher than have been formerly experienced. It will be necessary to lower these costs in order that they stay in business.

"The need for bringing low quality logs to the plants seems to be requiring prefabrication in order to get more value from the log.

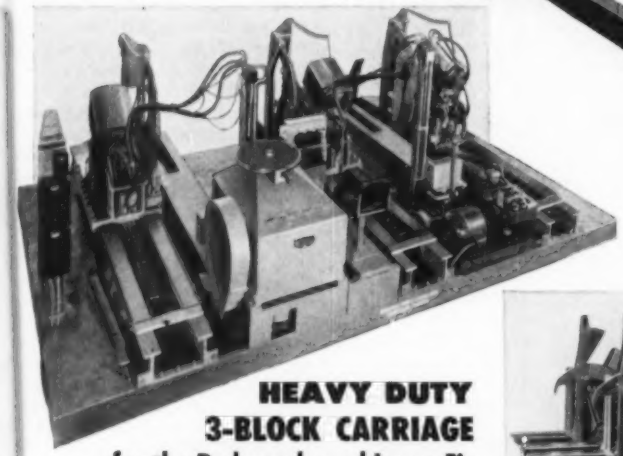
Over 100 MONARCH CARRIAGES

Monarch All Steel Air Electric Roller Bearing Carriages are furnished with 2, 3 or 4 blocks with openings from 48 to 84 inches. The carriages are custom-built to meet specifications of any size mill as the examples shown on this page testify.

Monarch engineering (developed by working with the industry) builds sawmill equipment for the job, whether that job is modernizing, retooling or new installation.

MONARCH EXTRA HEAVY DUTY AIR ELECTRIC CARRIAGE

With knees on head blocks driven by 1½" double roller chain. Extra strong frame with box section channel construction. This Carriage was installed by the new C. W. Guerrier Lumber Co., Springfield, Oregon.

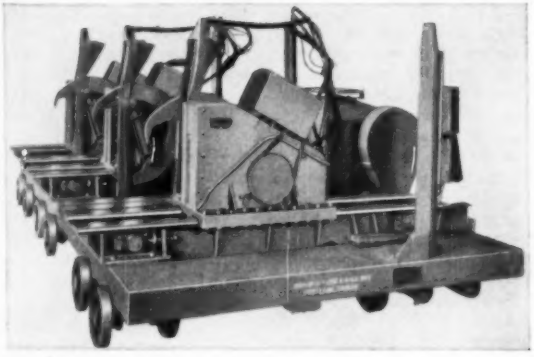


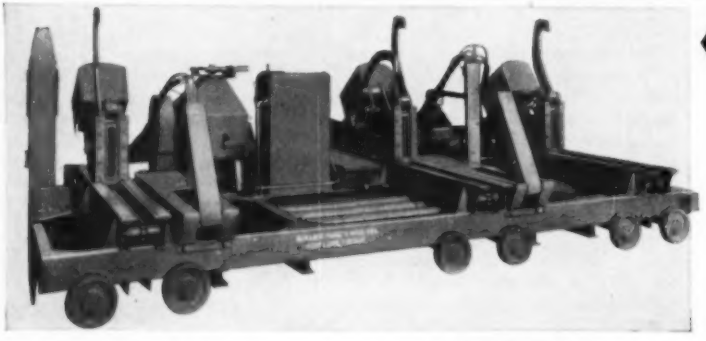
HEAVY DUTY 3-BLOCK CARRIAGE for the Redwoods and Large Fir

With large air operated log dogs as shown and a 25" air operated McDonough Board. Knees operated by 1¾" triple chain. Headrig side of the DEN-BAR Lumber Co. of Smith River, California.

ABOVE: Rear view showing operator's station and set works.

RIGHT: Front view showing log and board dogs.





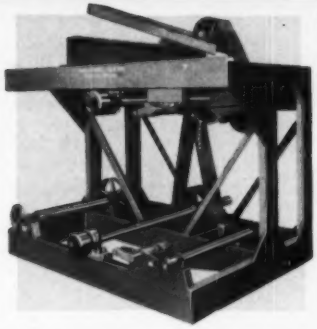
STANDARD 3-BLOCK 60" CARRIAGE

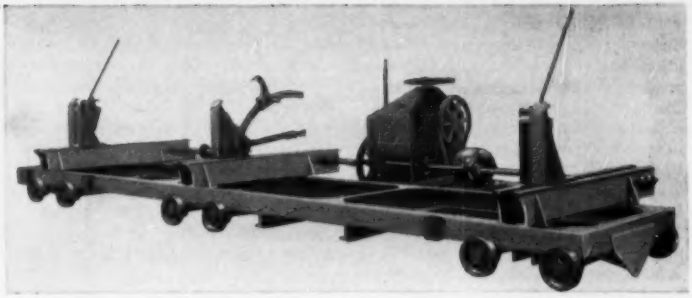
The setter performs all Carriage operations, Setting, Dogging, and Tapering with ease.

The Carriage shown illustrates the flippers with which the setter turns the log onto the deck from where it is pushed back against the knees, making for the most simple turning operation possible.

Air compressor and storage tank for operating dogs and flippers mounted on the Carriage as shown.

Installed in the Great Mills of the West





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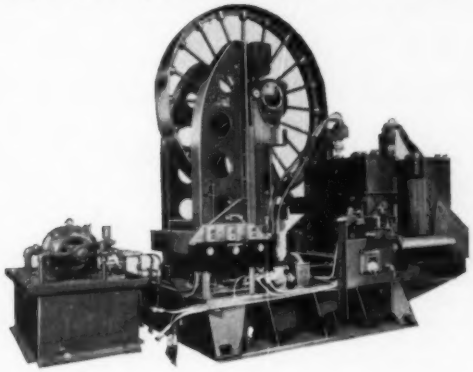

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BRIGHT PROSPECT FOR MORE BARK UTILIZATION

Accomplishments in the basic development-work program of Oregon Forest Products Laboratory, Corvallis, Ore., indicate possibilities of industrial production of additional products from Douglas fir forests. Through this organization's research activities (sustained by forest products industries in the state through timber severance tax funds), the foundation has been laid for establishing two industries in Douglas fir region, and possibly in Ponderosa pine. In each case bark would be used as raw product, thus the possibility of obtaining additional production without increasing the timber volume harvested.

The bark from harvested trees of this species runs into huge quantities over a one-year period. Based on an annual 6 billion board-foot cut of Douglas fir in Oregon and Washington, a potential bark yield from sawlogs alone is about 125 million cubic feet—15½ million tons. Additional bark sources would include plywood plants, pulp and paper mills, and pole and piling yards. Most of the bark resulting from these various forest products industries now is used as fuel or burned as means of disposal.

The two bark extractives now looked upon as possibly the first accomplishments of the research program to return operating dividends (through new products or processes) to industry supporting this organization are tannin and wax.

Dr. P. B. Proctor, technical director of Oregon Forest Products Laboratory, told The LUMBERMAN it seems likely that small scale commercial test plants for bark extractives will be set up within the next 18 months. Although all of the facts are not yet known, he feels that bark resulting from one large pole yard of the Douglas fir region would provide sufficient volume to supply a minimum size tannin extraction plant.

Tannin, obtained through simple water extraction, has been obtained in yields of 8 to 18% from sound Douglas fir bark. The highest concentration of tannin is present in bark from tree tops and from second-growth trees. The tannin extracts are concentrated to 50% total solid content and subsequently dried to a fluffy powder in sprav dryer, with up to 55% of the solid being tannin. This dry material can be supplied to tanners either as powder or solid, all components of which are soluble in water, thus eliminating the handling and shipping costs characteristic of liquids in necessarily larger volumes and lower concentration.

Studies have indicated advisability of building tannin extraction plants close to a suitable bark source. To obtain maximum tannin yield, the bark used should be fresh and should not have been stored in water. After the bark has been peeled from a log it should be immediately piled and dried. One lot of bark obtained from a bark-peeling operation indicated 10.8% tannin, calculated on moisture-free weight of the bark. After stacking and drying this bark, the tannin content (on same moisture-weight basis) increased to 16.03%.

If tannin recovery were computed on a 10% basis, 15 million tons of bark would produce 273,000 tons of powdered extract containing 55% tannin, or 150,000 tons of 100% tannin, according to laboratory findings. This is estimated as sufficient quantity for the United States' annual tannin needs, 70% of which is currently imported.

Calculated on the basis of one pound of 100% tannin being worth 18¢, the potential value of Douglas fir bark would be some $54 million per year.

The values of wax extractives from Douglas fir bark are even higher than the tannin values therein, the potential estimated at $75 million per year, predicated on a 5% wax recovery.

According to laboratory findings, Douglas fir bark contains 5-10% of hard, non-tacky Wax, about 70% of which is soluble in petroleum derived solvents and remainder in benzene and other solvents. Wax extraction runs were made on experimental scale on moist, ground bark in about 3 hours of extraction time with nearly 100% solvent recovery, according to Dr. E. F. Kurth, chief of chemical utilization section, Oregon Forest Products Laboratory.

It is anticipated that information on size and cost of plants for extracting tannin and wax from bark will be available early in 1950.

NEW POST-WAR PRACTICES IN SCANDINAVIAN COUNTRIES

Writing of recent sawmill developments in the Scandinavian countries, *R. D. Roe*, timber specialist of the Canadian government in London, states that visitors to Sweden and Finland are impressed with the machinery used and methods applied, the care and exactitude of manufacture and the complete integration of the industry with the resultant absence of waste.

"The principle applied in all Scandinavian export mills," writes Mr. Roe, "is frame sawing, both for thickness and width, with edgers only to edge those boards resulting in the first cut under the slab. Resawing and remanufacturing are confined to trimmer ends, and takes place in the box factory. A mill cutting 250,000 feet per day, in two shifts, has four jackladders, each supplying logs to one set of frame saws.

"Great care is taken to sort the logs before they enter the sawmill. Each diameter, sorted to the nearest half-inch and by species, is guided into separate stalls in the log pond. A full shift run will be made on each set of frames with logs of one diameter and only one species is sawn in the mill at one time. The size of logs varies slightly in different parts of the country, but the average is about 24 logs to 1,000 feet, sawn measure.

"Accurate sawing is considered essential by management and employees alike. Allowance for shrinkage is carefully calculated, and automatically compensated for in the set of all machines.

"One reason for the high world reputation of Scandinavian production is the perfect condition of the lumber when it reaches the consumer. It is dried for 18 to 20 percent moisture content; it is full to size when dry; it is clean, well graded, smoothing trimmed, and it is trade and grade marked. This procedure is partially window dressing, but pays dividends in the form of good prices and repeat orders. Great care is taken with piling for seasoning. All lumber is rough trimmed in the mill before piling, but is always retrimmed on both ends just before shipment.

(Concluded on page 100)

The Newman 512

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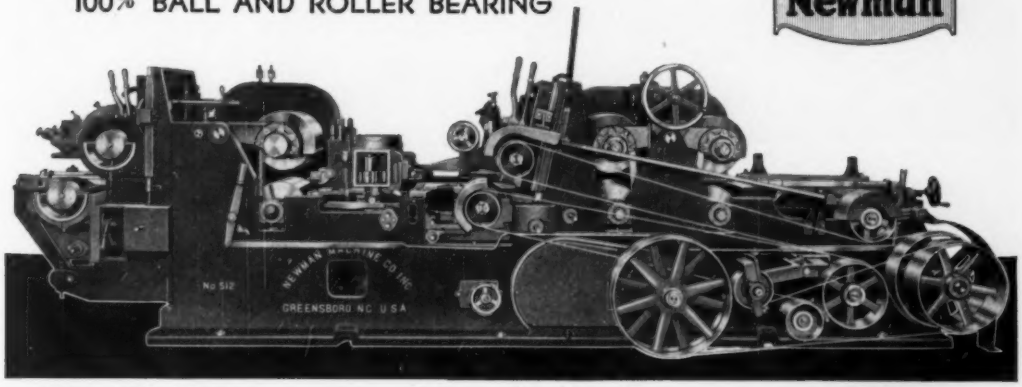

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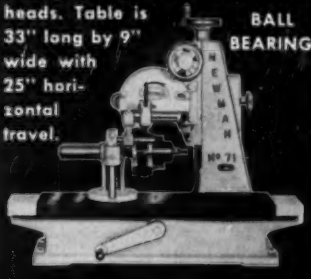
BALL BEARING



No. 55 AUTOMATIC PINEAPPLE FEED TABLE

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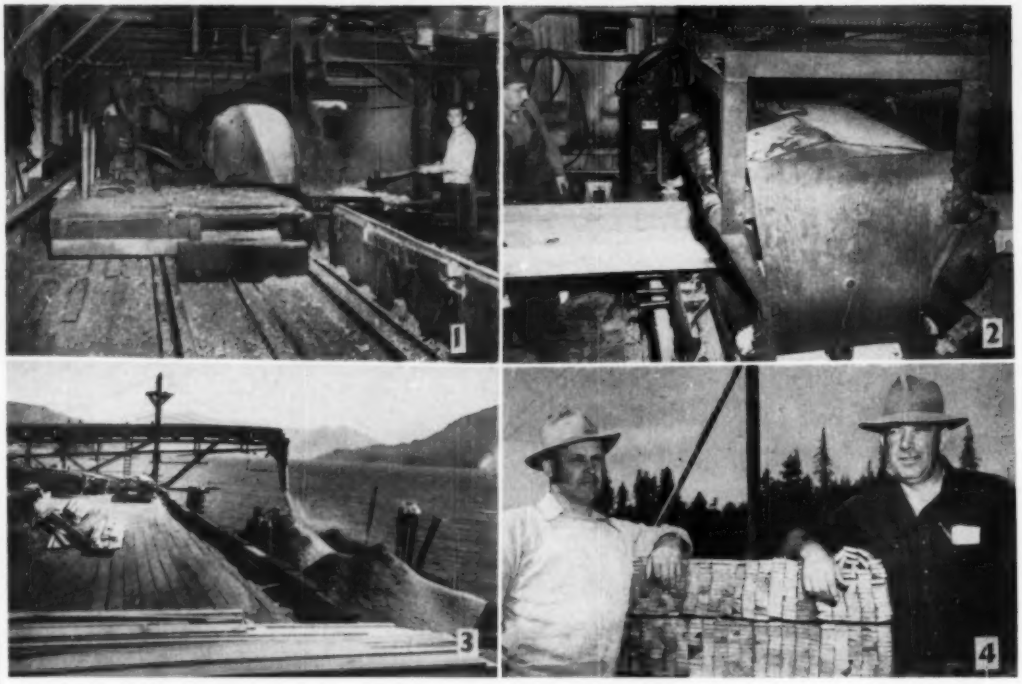

Lumber manufacturing at Hegewald Lumber & Logging Co., Stevenson, Wash. 1. Double circular headrig mounting Hoe saws operating in conjunction with Portland Iron Works carriage which is powered by vertical-drive steam Spee-D-Twin. The headrig is powered by 350 h.p. motor. 2. A 5" shop cant processed in 6x48" Portland Iron Works edger powered by G.E. 150 h.p. motor. 3. Loading hog fuel on a barge for transport down river to a large pulp and paper mill. 4. Top executives of the organization standing beside a carrier load of snow fence stock which was manufactured from by product wood pulled from the refuse conveyer. R. M. Hegewald, president and logging superintendent, is shown at left, and Norman Duncan, general manager, at right.

NO WASTE IN THIS MILL

NO WOOD BURNED EITHER FOR POWER GENERATION OR IN A REFUSE BURNER

In 1940 R. M. Hegewald, who had been logging in the vicinity, built a sawmill at Stevenson, Wash., as a means of contributing to local employment and resultant community stability. A subsequent seasonal flood in 1943, together with a general raising of water level above Bonneville dam to provide additional wartime electrical power, flooded out the mill. During the lush business years between inundation of the mill and 1947, Hegewald's industrial production was necessarily confined to logging. However, in '47 he resumed manufacture of lumber under the name of Hegewald Logging & Lumber Co., having cleared a site a short distance down stream from his former mill, and assembled his mill at that point, where it is now located.

Following similar stimulus to the one prompting him to build the original mill—applying more man hours to the timber within the tributary area—Hegewald's present mill was designed and operated so as to enable manufacture of saleable products from every portion of the logs reaching the mill. There isn't any "waste" here—of course, by-products are produced as in any other sawmill, but these are all marketed rather than otherwise disposed of or consumed just to get them out of the way.

Power at this mill includes both steam and electricity, but oil, rather than sawdust, bark, and other wood by-products, is utilized for fuel to generate the steam. The by-products conveyor coming from the mill is closely watched and all wood suitable for remanufacture is pulled from the conveyor for utilization. In fact, the wood obtained from this source provides sufficient suitable raw product material to support a 4-man factory manufacturing lath and snow fence.

Wood not pulled from the conveyor goes through a P.S.M.D. 48" hog and onto a barge for sale to a pulp and paper manufacturing plant for use as fuel.

No wood is burned at this plant either for disposal or for power generation.

Logs for the mill come from both privately owned and forest service timber. The company's timber is located 12 miles from the river, while the harvesting in Pinchot National Forest involves a 22-mile haul to the Wind River log dump. The company contracts log hauling to trucking contractors, doing its own logging, yarding with tractors—three "Caterpillars" and one Allis-Chalmers. The A-C, model HD14, has a Carco model K triple drum and Isaacson dozer. This unit is used both for yarding and road building. The "Caterpillar" yarding fleet includes a D8, with "Cat" tilting dozer

(Concluded on page 98)

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FLOW CHARTS CAN CONTROL PRODUCTION COSTS

By
H. E. BOVAY, JR.
Consulting Engineer, Houston, Texas

The flow chart is a very necessary tool in controlling costs, and as would be expected it is used most widely in those industries which have shown the greatest reduction in production costs, and which have led the way to modern plants, adequate for their job and with the necessary flexibility to meet market demands.

A flow sheet, properly prepared, is equally useful to the novice who must grasp the overall picture before he becomes a useful member of an industry; to the foreman who must know how his men must expend their efforts to best advantage; to the cost accountant who must keep management informed of production cost trends; to the engineer who plans changes to equipment on improvements in plant efficiency; and to management who must always be interested in increasing profit margins and meeting competition if the business is to be carried on successfully.

Simplifies Planning

Competition and technical advances go hand in hand. Both demand better tools continuously. Originally man used the stone hatchet; counted with beads; and determined loadings by finding out if a sapling would carry his weight. Today man uses bandmills to cut logs, a slide rule to calculate quickly, and vector diagrams to design load carrying members. At the same time he uses a flow sheet to reduce a complex operation to a clear picture necessary for planning and control of production costs.

Manpower Requirements

The flow chart of an existing mill, before improvements, shown in the illustration shows briefly, quickly and clearly the production, the manpower requirement, the flow of material and other pertinent information. It gives a clear picture of the milling operation that cannot be equaled by memory, by walking through the mill with its attendant distractions, or by any other method.

As prepared and used by my staff flow charts allow process studies to plan or improve operations to be made in the minimum time, and their use has resulted in considerable savings to manufacturers.

In a flow chart we have the advantage of an overall visible plan that can be analyzed with respect to reducing the unit cost of the product manufactured and keeping this unit cost low by reducing every operation of the plant to the same practical unit cost of the product. By first establishing the volume of production required, we can balance out each operation and get the required production with the least expenditure in machinery and labor. It has been found that some operations may be eliminated entirely or be combined with other operations to induce savings.

Other Advantages

A thorough understanding of the efficiency of all types of saw mill machinery should precede the analysis of any operation. If we use machinery in a certain operation that is too heavy or over designed, we are needlessly increasing the cost of the operation. By the same token machinery that is under designed for the amount of production desired, will induce heavy maintenance costs and expensive shutdowns.

There is another advantage to use of a flow chart besides obtaining initial production at the lowest cost. If these flow sheets are kept up to date and properly used, any executive can keep in close touch with his milling operation, even if he is a thousand miles from the mill. Knowing the conditions to be met at any given time, any intelligent man can glance at the flow sheet of his operations and quickly interpolate on it the effect of any change to the operation. It gives him a quick positive picture and makes it unnecessary for him to walk through the mill continuously, to stay familiar with its operations, and precludes the quite possible chance that he will forget some of the things he saw, because of distractions. As proof that this is possible, you will find that some of the largest manufacturers whose superintendents seldom have time to visit the plants, often have the lowest production costs. In other words, they have no choice but to keep up with operations by intelligent use of work sheets and good data, because they can concentrate on this rather than walking around the plant, dodging workmen and trying to keep from getting in the way. They can arrive at sound conclusions based on facts and figures rather than on conclusions that are colored by likes and dislikes for the foremen in charge of the operations.

Helps in Cost Accounting

The flow chart, when studied for the purpose of showing benefits or exposing defects of production and handling operations, provides a sound and practical tie-in to good cost accounting. Certain of the lumber mills in the South are currently endeavoring to exchange information as to their individual overall and detailed costs of materials handling and manufacturing. This is certainly a step in the right direction and greatly to be desired—for this exchange will lead to comparisons of methods, equipment, and "know-how," resulting in many advantages to the lumber industry.

It is felt that the use of the flow chart, as prepared for the various mills to define and clarify each separate milling and handling operation, would provide a very logical and practical means of establishing bench marks or common bases for discussion and exchange of cost information between lumbermen.

The writer would add a word of caution. A flow sheet is no better than the care used in its preparation. Because of its very simplicity it can be entirely misleading if prepared and analyzed by inexperienced groups. Just as we have found men working in the planing mill charged to log unloading by mistake, so can the wrong flow result in inaccurate conclusions to the extent that best production economy is lost.

Mr. Bovay showed and discussed the accompanying flow chart to Southern lumber manufacturers during a session of the Southern Pine Association in New Orleans last spring. Much interest was taken in his presentation.—Editor.

STRAIGHT LINE FLOW DIAGRAM

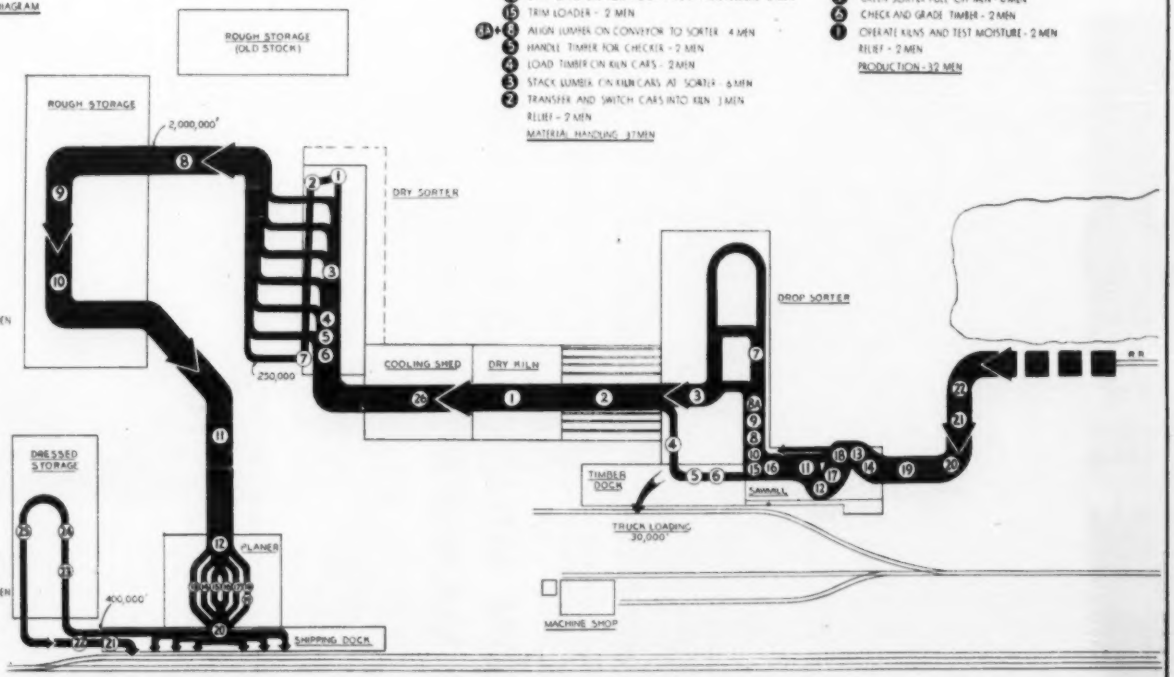
SAWMILL AND GREEN SORTER
TWO SHIFT OPERATION

- (22) UNLOADING FROM R.R. CARS & LOAD ON CONVEYOR - 2 MEN
- (21) LOG TRANSFER CHAIN - AUTOMATIC
- (20) LOAD LOGS ON CONVEYOR - 2 MEN
- (19) LOG CONVEYOR TO SAWMILL - AUTOMATIC
- (18) ALIGN LUMBER FROM BANDMILL - 2 MEN
- (17) ALIGN LUMBER ON CROSS CONVEYOR - 4 MEN
- (16) STRIP CATCHERS FOR HOG - 4 MEN - HOG FEEDERS - 2 MEN
- (15) TRIM LOADER - 2 MEN
- (14) & (8) ALIGN LUMBER ON CONVEYOR TO SORTER - 4 MEN
- (5) HANDLE TIMBER FOR CHECKER - 2 MEN
- (4) LOAD TIMBER ON KILN CARS - 2 MEN
- (3) STACK LUMBER ON KILN CARS AT SORTER - 6 MEN
- (2) TRANSFER AND SWITCH CARS INTO KILN - 3 MEN
- RELIEF - 2 MEN

MATERIAL HANDLING - 37 MEN

- (14) SCALE LOGS & UNLOAD CONVEYOR - 2 MEN
- (13) BANDMILL - 4 MEN
- (12) GANGSAW - 4 MEN
- (11) EDGERMEN - 4 MEN
- (10) TRIMMER - 2 MEN
- (9) GRADE LUMBER ON CONVEYOR - 2 MEN
- (7) GREEN SORTER PULL OFF MEN - 8 MEN
- (6) CHECK AND GRADE TIMBER - 2 MEN
- (1) OPERATE KILNS AND TEST MOISTURE - 2 MEN
- RELIEF - 2 MEN

PRODUCTION - 32 MEN



DRY SORTER AND PLANNING MILL
ONE SHIFT

- (1) GRADE LUMBER ON DRY SORTER - 3 MEN
- (1) DRY SORTER PULL OFF MEN - 11 MEN
  (10 PULL OFF AND 1 RELIEF)
- (1) RE-MANUFACTURE LUMBER FOR UPGRADING - 5 MEN
  (3 RECUT AND 2 RESORT)
- (1) GRADES REMANUFACTURED LUMBER - 1 MAN

PLANING MILL OPERATION
- (1) ASS'T. FOREMAN - 1 MAN
- (1) MACHINE FEEDERS - 4 MEN
- (1) GRADERS - 5 MEN
- (1) TRIM MAN - 4 MEN
- (1) TRADE NAME STAMPERS - 4 MEN

PRODUCTION - 38 MEN

- (26) TRANSFER CARS OUT OF KILN - 1 MAN
- (1) UNLOAD KILN CARS ONTO SORTER - 2 MEN
- (1) RETURNS, STICKS TO GREEN SORTER - 2 MEN
- (1) STRAIGHTENS LUMBER ON CONVEYOR - 1 MAN
- (1) CARTS RE MANUFACTURED LUMBER - 1/2 MAN
- (1) CARTS LUMBER TO ROUGH STORAGE - 2 1/2 MEN
- (1) UNLOADS CARTS & STACKS LUMBER - 17 MEN
- (1) LOADS CARTS - 13 MEN
- (1) CARTS LUMBER TO PLANER - 3 1/2 MEN
- (1) PULL-IN MEN FOR PLANER - 2 MEN
- (1) TIE UP PINE FLOORING WITH STRING - 7 MEN
- (1) LOAD R.R. CARS FROM PLANER - 11 MEN
- (23) CARTS LUMBER TO DRESSED STORAGE - 1/2 MEN
- (24) UNLOADS CARTS & STACKS LUMBER - 2 MEN
- (25) LOADS CARTS - 2 MEN
- (22) CARTS LUMBER TO SHIPPING DOCK - 1 MAN
- (21) LOADS R.R. CARS FROM DRESSED STORAGE - 2 MEN

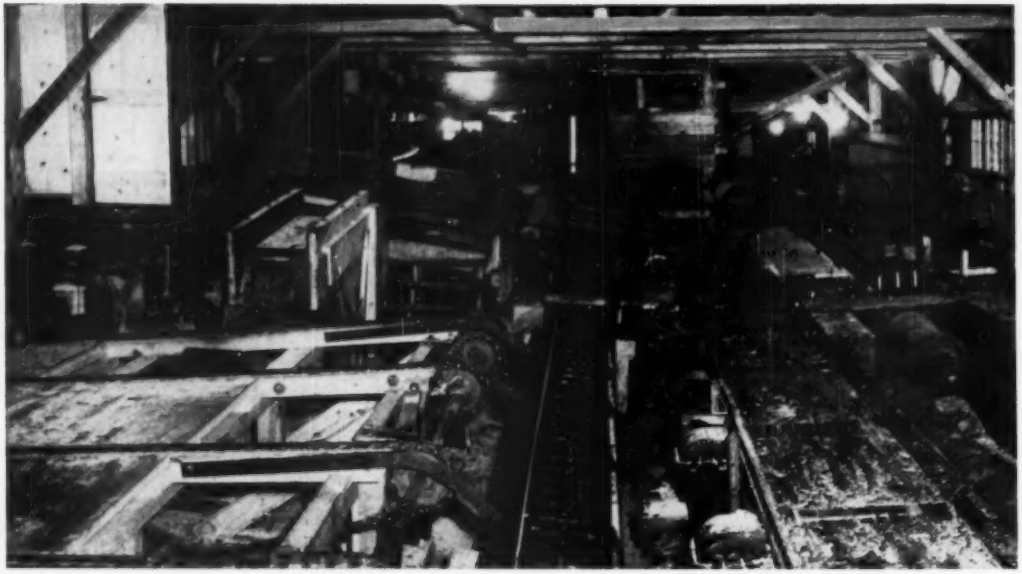
MATERIAL HANDLING - 65 MEN

NOTES:
1. PRODUCTION FIGURES ARE FOR TWELVE MONTH AVERAGE 1948
2. SAWMILL & GREEN SORTER OPERATED TWO EIGHT HOUR SHIFTS
3. MANUFACTURING EMPLOYEES ARE CLASSIFIED AS FOLLOWS

OFFICE AND SUPERVISION 5.7%	PRODUCTION 29.4%
MACHINERY AND MAINTENANCE 22.2%	MATERIALS HANDLING 42.8%

H. E. BOVAY, JR.
CONSULTING ENGINEERS

TYPICAL PROCESS FLOW CHART
EXISTING MILL
BEFORE MODERNIZATION



Interior view of the Ozan Lumber Company's sawmill. Carriage and headrig on the right. Note live rolls and conveyor through the center of the mill which serve various units. There are two resaws, one a vertical and one a horizontal, on either side of the mill. Very little manufacturing is done on the headrig.

SOUTHERN MILL'S ANSWER TO HIGHER MANUFACTURING COSTS

Greater yield from the log and improved manufacturing methods constitute the southern operators' answer to higher costs of labor, according to James R. Bemis, president and general manager, Ozan Lumber Company, Prescott, Ark. Mr. Bemis, who serves as chairman of the Southern Pine Association's mechanical efficiency committee, believes that engineering in the southern sawmill has been expressed in greater use of the resaw to increase yield, the installation of smooth-end trimmers to improve marketing value, and modern, faster planing mill machinery.

In the Ozan sawmill in Prescott, a much greater yield in over-run from the log, and higher percentage of "C & Better" grades has been accomplished by skillful use of the resaw, and placing of the edger back in the re-manufacture plant. Instead of the ender, the sawmill has two resaws, one horizontal and the other vertical.

Facing the back of the mill, the logs enter the mill on the left, the log deck carrying them to the Filer & Stowell No. 1 carriage on the right. The carriage is equipped with 10-inch gun, Trout set-works, and air dogs. The circular rig is completed with a 60-inch solid tooth 8/80ths saw.

The timber available to Ozan runs mostly into the smaller sizes. The smallest logs may be cut down the center and the two halves sent back to the horizontal resaw. The largest may have an almost paper-thin slab taken off, be worked down into cants. The cants go to the vertical resaw, and the cuts having bark sent to the horizontal.

James ("Jim") R. Bemis, President and General Manager, Ozan Lbr. Co., Prescott, Ark., who also serves as chairman, Mechanical Efficiency Committee, Southern Pine Association.

All cuts from the log go onto an activated roller bed extending the length of the sawmill and ending on a conveyor table that serves to change direction to the right, feeding the lumber across roller-bearings to rollers moving forward to the resaw.

Halfway down the primary roller bed, an operator on a raised platform steps on a plunger to drop the thin bark slabs down to the waste chain. Cants clear of bark or bearing only a feather advisable under the grade rules are thrust sideways but a few inches (a short pike pole is used) onto a chain to a conveyor table completing the rest of the journey back to the mill's left side where they drop onto the chain feeding the vertical resaw.

After lumber passes through the horizontal resaw it goes onto a conveyor table that runs the width of the mill from right to left, termi-

(Concluded on page 99)

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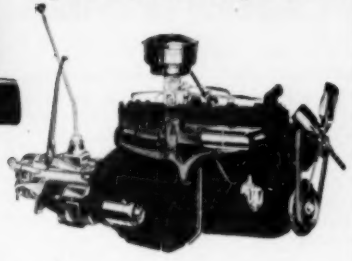

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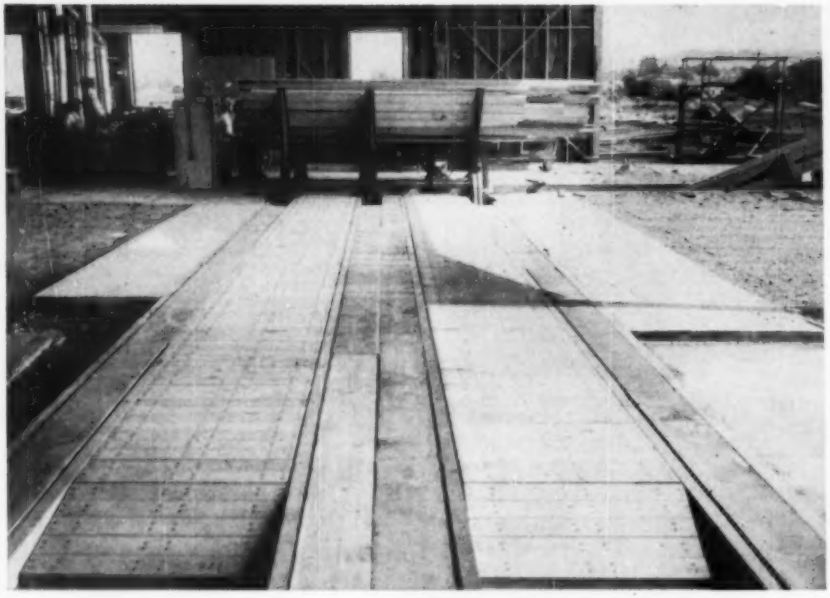

Showing the first installation of the new Stetson-Ross traveling apron deck conveyor used for bringing carrier loads to the Stetson-Ross unloader hoist in the planing mill of Stonitsch & Arvold, Petaluma, Calif. Note the two endless bed floor sections with hardwood slats firmly bolted in place. Stetson-Ross planer at upper left.

PLANING MILL INNOVATION

Faced with rising costs, the bugaboo of the small businessman, the Petaluma, Calif., custom planing mill firm of Stonitsch & Arvold, has met this challenge by increasing production with the latest type machinery.

For example the firm has just installed what is thought to be the first Stetson-Ross traveling apron deck conveyor in the United States. The conveyor is used for bringing carrier loads to the Stetson-Ross unloader hoist.

The features of this conveyor are unique. It consists of two endless bed floor sections with hardwood slats securely bolted in place. These slats are bolted to roller chain which runs on steel strips, thus greatly reducing friction.

The advantage of this type of conveyor is that it enables the Ross carrier operator to easily find a spot on the conveyor for a load and it results in easier, faster operation in carrying lumber to the conveyor, with a lessening of spillage, and in general increasing the speed and efficiency of the plant.

As Oliver L. Arvold, one of the partners, says: "The apron has the advantage that the carrier operator can deposit his load of lumber immediately and not have to fool around positioning blocks. With the use of the apron the operator can put his unit of lumber down any way. Another advantage is that a greater number of units may be placed on the apron. There is room for five carrier units on the apron and one on the Stetson-Ross tilting unloader hoist."

It is also pointed out that with the new apron conveyor fewer chains are required in each traveling apron section. In fact only three chains are required in each traveling apron section.

The carrier operator can easily spot the loads on the wide, smooth apron conveyor surfaces, whereas with the old familiar chain clusters it is easy to get the loads inaccurately spotted.

The carrier blocks are deposited on a conveyor which removes them outside the planer building, to where they can be conveniently picked up for re-use.

From the apron conveyor lumber goes to a new Stetson-Ross 603E three arm tilting unloading hoist, then through a Stetson-Ross 511E feed table which feeds the new Stetson-Ross 6-10-A1 planer and matcher.

The feedworks of the planer and matcher is powered by means of a Louis Allis Adjusto-Spede feed motor, and it is also equipped with

Left to right—W. M. McCLUSKEY, filer; and G. M. STONITSCH and OLIVER L. ARVOLD, partners in Stonitsch & Arvold planing mill, Petaluma, Calif.

a dial conveniently located to show the lineal feet per minute of feed.

The company also built a new sorting table, using chains furnished by C. M. Lovsted Co., and powered with a Link-Belt 7½ h.p. motor with a speed reducer.

Resawing is done with a Berlin 20 x 24 resaw.

Lumber is unloaded and loaded on and off of trucks and railroad cars for which is provided a spur track, by a P&H electric hoist. It is handled about the mill by two Ross straddle carriers and a Ross lift truck.

The blower system and the 35′ burner was provided by the Rees Blow Pipe Manufacturing Co., San Francisco.

The grinding room is equipped with a Stetson-Ross No. 277A combination grinder and jointer, and a Covel grinder. Jones & Orth mill pattern cutter heads and knives are used.

In the filing room is a Hanchett saw sharpener and bench. Filer is W. M. McCluskey, who started filing in the East. He was one of a family of six brothers—three of whom became filers, and the other three became sawyers. McCluskey filed for a time for the Winton Lumber Co., Martell, Calif.

G. M. Stonitsch and Oliver L. Arvold, partners owning the company, are friends since boyhood. They started together in the lumber business in 1936 right in their old home town of Petaluma, with a cabinet shop, and one truck. Since that time their growth has been steady.

After the war, they relocated their plant and increased the scope of their operations. They do both a remanufacturing and a retail lumber business. The remanufacturing business is about 80% custom milling for the sawmills in the hills of Sonoma and Mendocino counties, and about 80% of the lumber handled is redwood. If any of their customers desire steel strapping on their lumber, previous to shipment, it is strapped with Signode strapping.

The plant has a capacity of about 50M′ of finished lumber daily, and some 20 men are employed in the entire operation.

Wood Leftovers in Spokane, Wash., Area Classified

According to a report prepared by O. Harry Schrader, Jr. just released by the Washington Institute of Forest Products, in 1948 the annual volume of wood leftovers at thirty wood using plants in the Spokane, Wash., area was classified as follows: 6,500 cords of green slabs; 10,000 cords of dry planer blocks; 3,000 cords of match blocks; 30,000 cords of green hog fuel; 8,000 cords of green sawdust; 3,000 cords dry resaw sawdust; 140,000 cords of shavings, or a total of approximately 200,000 cords.

This material was purchased, collected and marketed for various purposes by Lumber By-Products Company. This company operates a wood flour plant, owned by the Durez Plastic and Chemical Company. This plant has a capacity of 40 tons but there is insufficient suitable raw material to operate it at capacity, according to the report. Lumber By-Products Co., during the past year, installed two Presto-log machines having a capacity of 7,000 tons a year.

Some of the wood leftovers, such as dry resaw sawdust, is sold to local plants for use in the manufacture of floor sweeping compounds. Further studies are being made to develop high value waste utilization.

Development of leftovers has been sponsored by an organization known as Inland Empire Industrial Research Corporation.

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Timber cruising and volume estimation panel at Annual meeting Columbia River Section, American Society of Photogrammetry held in Portland Dec. 7. Left to right, HERBERT G. CHICKERING, Jr., vice-president of the Section; J. R. DILWORTH, assistant professor of Forest Management, Oregon State College, presiding as moderator; KENNETH BRADSHAW, California Forest and Range Experiment Station; C. E. REYNOLDS, Aerial Mapping Co.; H. K. TROBITZ, Simpson Logging Co.; A. B. POPE, Pacific Northwest Forest and Range Experiment Station; H. J. HIXON, U. S. Forest Service; HERBERT A. JENSEN, Hammon, Jensen & Wallen.

THE PLACE OF PHOTOGRAMMETRY IN THE FOREST INDUSTRY

The annual meeting of Columbia River Section, American Society of Photogrammetry, was held Dec. 7 at Portland, Ore. Of particular interest to the forest products industries, was a panel session giving consideration to timber cruising and volume estimation through the use of aerial photographs. J. R. Dilworth, assistant professor of forest management, Oregon State College, presiding as moderator, emphasized the need for top quality photographs to effectively aid as a forest management tool.

C. E. Reynolds, Aerial Mapping Co., discussed the estimation of timber volume on small tracts, a section or less, by photo-cruising. He suggests using photographic enlargements at a scale of 400 feet to the inch. Using width of crown as d.b.h. (diameter breast high) index, the gross volume of each species can be estimated from suitable volume tables.

Experienced personnel working a short time on the ground in the woods area considered, can obtain basic information for converting from gross to net volumes. Reynolds said such a cruise is not as accurate as a ground cruise, but is definitely a forest management aid and is obtained at about one-quarter the cost of a 10% ground cruise.

H. K. Trobitz, Simpson Logging Co., Shelton Wash., told how his organization has been photo-cruising. In the Simpson operations, second growth stands are largely on the flats and old growth on rougher ground, some of the latter was in unsurveyed areas. To inventory the old-growth timber the forest land was areial photographed and a reliable map subsequently made which included draininge detail. One-mile strips were superimposed on the map.

From aerial photos the timber cruisers could ascertain extensive time-saving data. In 28 man days in the field adequate control was obtained on 50,000 acres of forest land, according to Trobitz.

He said that accuracy of the project was beyond expectations, that some road locations can be accomplished directly from the photographs even in rough areas, and settings are laid out from the photos.

The Simpson organization has used aerial photographs for quickly inventorying lands offered for sale. This results in a rough appraisal within a few minutes after examination of the photographs, Trobitz stated at the meeting.

H. J. Hixon, U. S. Forest Service, participated in the timber cruising and volume estimation section of the program. He said that 75 to 80% of the forest service lands in the Northwest have been aerial photographed with a single lens camera, mostly on a scale of 1 to 20,000. He called attention to two types of aerial forest surveys; one for management and the other for sales. The management surveys include forest type delineations, and type lines indicating site quality, and sales surveys show volume to be cut, log grade, boundaries and cutting type, and stand structure.

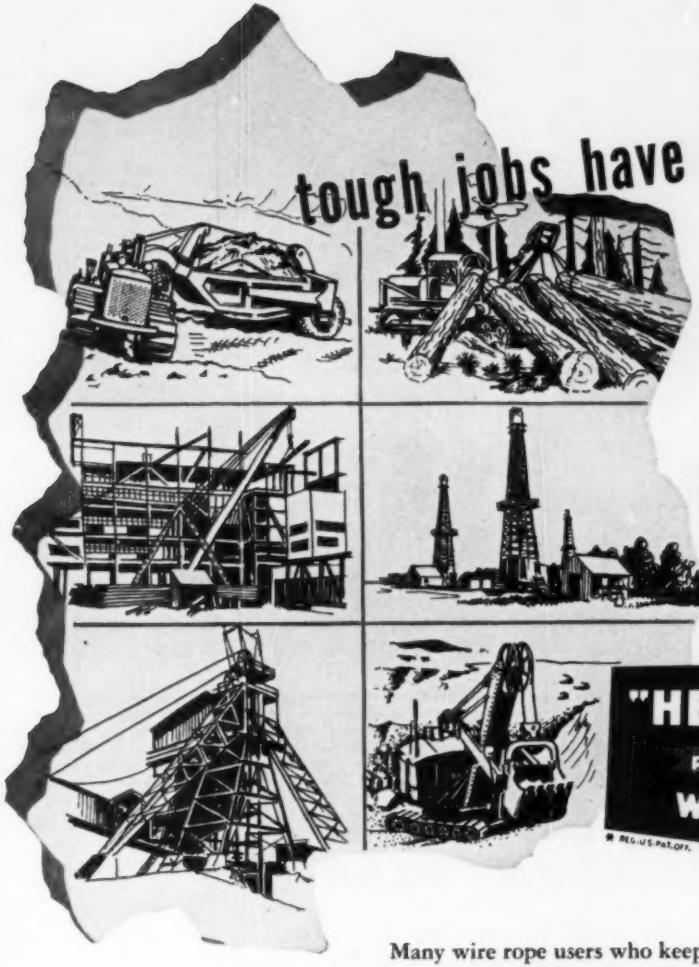
It was pointed out that better and cheaper type maps are obtained by combination of aerial and ground work. Aerial photographs have a definite value in planning a timber cruise, and stratification of plots was suggested for most accurate results. It was also suggested that vertical surveys be followed up with oblique photographs from known points to obtain additional identification data.

R. B. Pope, Pacific Northwest Forest & Range Experiment Station, told of work being carried on with view to developing volume tables which would provide indices for obtaining volume data directly from aerial photographs, thus appreciably reducing the amount of necessary leg-work in the field. Progress has been made in this direction but the work is still incomplete, according to Pope.

Kenneth Bradshaw, California Forest and Range Experiment Station, discussed the current national forest survey which is carried on with view to determine location, extent, and condition of the nation's timber resources. This covers small and large privately owned tracts and governmental timber. The survey work in California is 50% completed.

Herbert A. Jensen, of Hammon, Jensen & Wallen, Oakland, Calif., briefly commented on various film-filter combinations for forest aerial survey work. Different combinations have individual advantages, however, no general rules should be made, according to Jensen.

Another section of the meeting was devoted to classification and appraisal of land by means of aerial photography, at which session Paul M. Sanders, chief forester Willamette Valley Tree Farms presided as moderator.



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Logging of sawmill and peeler logs by Weyerhaeuser Timber Co., Longview, Wash., branch, along South Toutle river after logging out the pulp species. 1. Yarding with "Caterpillar" D8 tractor with Hyster arch from above the landing. 2. Washington yarder powered with the new NVH 400 h.p. Cummins diesel engine driving through Twin Disc 2-speed and torque converter. The yarder is mounted on 5-axle wagon with steel wheels. 3. Loading long sawmill and peeler logs onto truck-trailer with Model 95 Northwest shovel loader powered by Murphy diesel engine. 4. LJ Mack truck with Page & Page trailer carrying 11M foot load of logs from this main logging side to load transfer at rail siding. Truck hauling is contracted to Ben A. Thomas, Woodland, who operates fleet of 11 Macks, 8 LJSW models and 3 EQSW units.

LOGGING ON A LONG TERM FOREST MANAGEMENT PLAN

An example of present-day timber harvesting, carried on in conjunction with long-term forest management plans, through use of effective logging techniques and modern machinery was recently observed by The LUMBERMAN at the Longview, Wash., branch of Weyerhaeuser Timber Co.

To the north of the South fork of Toutle river, just across the stream from Camp 6 area, logged some 10 years ago, which is now a living example of natural restocking from reserved seed trees, logging is carried on in two principal phases. First, the pulp species are removed with tractors mounting triple drums. After harvesting of pulp wood, the sawmill and peeler log harvest is effectively carried on free from breakage of the smaller, secondary trees—as they have already been removed before the larger trees are harvested.

Here, some 20 miles from Castle Rock, logs are loaded onto truck-trailers with shovel-type loaders, including both main logging and pre-logging phases, and hauled to rail head for transfer onto rail cars for transport to the company's integrated forest products industries manufacturing operations at Longview. There logs are primarily converted to pulp, lumber, or plywood, and by-products from these manufacturing processes converted into several specialty items, some of which were developed by the company's own research work.

Equipment making up this pre-logging side, which harvests 75 cords of pulp wood per day, includes two tractors, a D7 "Caterpillar" and TD18 International, both equipped with Carco triple drums for yarding, and a Waukesha powered rubber-mounted Browning wagon crane for loading the pre-logged logs onto truck-trailers.

Yarding and loading of the sawmill and peeler logs at rate of 120M feet per day is carried on by means of modern, heavy duty converted steam yarder powered with one of the brand new V-type high-powered diesel engines driving through Twin Disc torque converter and Twin Disc 2-speed hydraulically operated transmission. This is the first installation of this type in the Northwest. This Cummins engine, a Model NVH-1200 developing 400 h.p. at 2100 r.p.m. at which speed it is governed, is installed in a 13x14 Washington Iron Works yarder in turn mounted on a 5-axle wagon which sets and rides on steel wheels made up of 64 railroad car wheels. These car wheels are without flanges and are mounted in sets of four wheels per unit. The wagon, without including weight of the yarder, weighs 27 tons, according to Clyde A. Corman, logging manager of the Longview Division. This type of yarder

William I. Baker, camp foreman, communicating through the company's Radio Specialty Manufacturing Co. two way system consisting of 7 mobile units and one fixed station.

mounting was developed in the company's Vail, Wash., operations when John Wahl was logging manager of the Vail and McDonald camps. The first wheel mounted unit was described and illustrated in the March 1948 LUMBERMAN. Mr. Wahl is now logging production manager for all Weyerhaeuser operations with headquarters at Tacoma, Wash.

Logs from the more favorable slope area around the landings are yarded by a D8 "Caterpillar" tractor pulling Hyster A-frame arch and equipped with bulldozer and Hyster towing winch. Yarding of the rougher and more distant logs is taken care of by the above mentioned Cummins-Washington highlead yarder.

Loading peeler type and sawmill logs onto truck-trailer at the landing is carried on by means of a model 95 Northwest long track shovel loader powered with ME6 Murphy diesel engine. Trucking of logs to a rail siding is contracted to Ben A. Thomas, who has a fleet of Mack trucks including three LJ model Macks with Page & Page trailers on the 5½ mile haul from main side to railroad. There a Berger transfer machine lifts the logs from truck-trailer, a full load per turn, and places the load on a rail car for transport to the mill. The transfer unit is powered with 150 h.p. Cummins diesel engine.

Trucks have 10-foot bunks and carry an average of about 10,000 board feet of logs per load.

William I. Baker is camp foreman of this logging operation, and Glen Masterson is logging superintendent.

New Mill in Operation

Dahl Pine, Inc., a 'new lumber manufacturing firm, has started one-shift operation of its new sawmill on the Warm Springs Indian Reservation 20 miles from Warm Springs, Ore. The company has contracted for purchasing 100 million feet of the reservation timber, 95% of which purchase is Ponderosa pine. Construction of the mill was started last summer by Phil Dahl, of Redmond, and Harold Barclay, of Sisters. Dahl is an owner of Tite Knot Pine Mill, Redmond, and Barclay is logging manager of the Tite Knot organization.

Fourteen Mile Logging Road

Doug Mavor of Johnson & Mavor Logging Co., Sedro-Woolley, Wash., is devoting the winter months to the engineering location of fifteen miles of new road for the Marenokas Logging Co. of Yacolt, Wash., working with Art Rickerd and Bill Marenokas.

The road will open up a 44 million bd. ft. USFS timber purchase made by Marenokas Logging Co. Of the total sale, 38 million feet is high grade peeler fir. All the logs will go on the open market.

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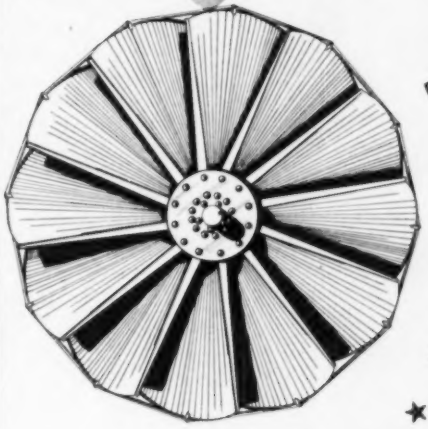

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PRE-LOGGING AND RE-LOGGING

DISCUSSED AT 28TH WASHINGTON STATE FORESTRY CONFERENCE

At the recent 28th annual Washington State Forestry Conference in Seattle, B. L. Orell, State Supervisor of Forestry, outlined plans for the reorganization of his department. He said the department aims to lead in all forestry matters in the state and not be just a fire organization. Three departments are to be established. 1. Control (fire); 2. Management; 3. Conservation and Maintenance. Each will be in charge of an assistant Supervisor of Forestry. The state will be divided into five areas, three on the west side and two on the east, each to be headed by a field supervisor who will be empowered to make decisions of most problems on the spot. The district organization will remain as it is. A detailed protection survey will be made this winter. The radio set-up will be augmented and improved. Mr. Orell said the state will be able to do a better job of administering Forest Board lands. He said some changes are needed in the new Forest Practices Act particularly as to slash disposal. He said the state should have power to cancel cutting permits if operators do not comply with the Forest Practice Act. He said a merit system of employment should be adopted which would make jobs in the department more attractive.

Highlights of the discussions were talks by Vincent Bousquet, branch forester, Weyerhaeuser Timber Company, who discussed prelogging and by Roy Carlson, forester, Rayonier, Inc., who discussed relogging.

Prelogging

Mr. Bosquet in his talk said a pattern for prelogging is evolving. "It has been proved," he said, "that logs can be high-leaded through trees for distances up to 500 feet." He said heavy equipment is used successfully and that air tongs are being successfully used for loading. He said the same equipment has been used for relogging.

"We use ¾ or ⅞ inch main lines," continued the speaker, "⅝ inch haul-back lines and ⅝ inch chokers. Our rigging crews consist of four men, yarder engineer, chaser, whistle punk, and combination rigging-slinger-chokerman who is in direct charge of the side. A conventional loading crew consists of engineer, first loader and second loader. This crew is reduced when air tongs are employed. We remove from 5 to 30 or more cords per acre, mostly hemlock, from our understory stands. Trees are bucked to a four inch top and yarded in 40 foot lengths where possible. They are loaded as yarded and banded together with steel bands and arrive at the mills in this manner. One efficient loading crew will keep two or three yarding crews busy depending on local stand conditions, topography and other factors.

Because we are able to utilize our prelogging equipment to near its full capacity, means that when our heavier equipment moves in to remove the old growth, it too, can operate near capacity because it is called upon to handle only the larger logs and chunks.

"We attempt to get our prelogging operations into all areas supporting an understory and from which we plan to remove the big timber sometime during the current year. This is taken into consideration when logging road extensions are planned.

"Usually windfalls and snags are bucked into logs before the remaining stand is felled and then yarded to the landing along with the rest of the logs.

"Although a good beginning has been made it is evident that even under the most favorable conditions, prelogging will not cover more than forty to seventy per cent of the total area to be logged because of stand conditions, topography, and other factors."

Relogging

On the relogging side of the discussions Mr. Carlson said, "In general, relogging calls for light, fast and mobile equipment. Considerable money has been spent by private operators to develop such equipment so costs can be reduced and thereby more material salvaged.

"Equipment and power used today ranges from horses and 'strong arm,' through tractors, donkeys, manufactured steel spars mounted on tractors, sleds, or track type wheels, to combination machines for cutting and loading. There is plenty of room for further development.

"Transportation is one of the most important factors governing the economics of relogging. On areas where truck logging has been done there are usually sufficient roads available for relogging. On railroad operations the transportation problem is complicated in several ways because of interference from and to the regular logging traffic, then too reloading from truck to rail is costly because of the large number of small pieces to be handled. On some of our operations the 8 foot wood going to a rail reload point is strapped with small cables in bundles of about 1 cord size. At the reload point the bundle is lifted off the truck and placed in a storage pile or directly on the rail car. This bundling process speeds up the entire operation by eliminating the small piece handling, but requires sturdy equipment to handle each heavy bundle. These straps are left on the bundles while they are dumped in the water, stored and finally taken to the mill where they are of course removed before the barking process starts.

"At one of our pulp mills approximately one-third of the wood used during the year 1948 was in the form of 8 foot cordwood, and about one-half of this wood was produced from salvage operations on lands which we own.

"Figures being compiled by the Institute of Forest Products show that of the 1,490 million feet used at 19 of our Washington pulp mills during 1948, the equivalent of 117 million feet was in the form of salvage material. This means that 8% of the wood used was salvaged material. We believe that when final figures are compiled for all the mills in this state the proportion of salvage volume will be somewhat higher."

Forest Leftover Inventory

At the morning session Norman Worthington, Puget Sound Research Centre, gave a progress report on experimental cuttings in second growth fir. He said the studies now being made should produce some very surprising information.

Knut Lunnum reported on the More Trees for Washington Movement, a campaign sponsored by the Conference.

Herbert Brier, director of the Keep Washington Green, told of the many results obtained during the past year and outlined some of the plans for 1950.

(Concluded on page 100)

MODERNIZATION RESULTS IN SOUTHERN MILL REVIEWED BY INDUSTRY LEADERS

Warren, a live town in South Arkansas has an economy based on wood, having for many years enjoyed the distinction of being the biggest lumber shipping point in the country. Long ago the lumber industry centered at Warren recognized the necessity of efficient manufacture and a continued crop of trees.

The Southern Lumber Company, of which W. R. Warner is general manager, has had a long-time improvement program the advancement of which has been largely effected despite the handicaps of war and postwar conditions. These improvements were reviewed in late October when sixty lumbermen of Louisiana, Arkansas and East Texas toured the mill under the auspices of a mechanical efficiency meeting conducted by the Southern Pine Association.

The company owns 125,000 acres in fee simple with an additional 25,000 acres under long time timber-management contract. These forest stands, some as close as 4½ miles from the mill, are under an advanced forestry program, assuring the manufacturing plant of an endless operation. The milling operation includes the larger unit at Warren, a small mill located elsewhere, and two portable units in the woods. The total employment is about 500 persons, with shipments approximating 2,750,000 feet BM of pine and 750,000 feet of oak flooring.

As part of its forest management-logging program, the company has laid out 125 miles of woods-roads. Not all of these have been topped with gravel yet, but the work is being pushed. Drain ways are taken care of by concrete culverts purchased to standard highway specification. The earlier roads were made with 20-foot crowns, but the width subsequently increased to 24-feet. The roads being laid today are straighter, and with more cutting down of hill tops. The general road program results in more logs to the mill per unit of equipment, and reduced maintenance costs for the equipment.

As elsewhere in the South, where hardwoods tend to infringe into more desirable, principally pure pine stands, the company maintains a control program. Poisoning of unmerchantable hardwood trees has been conducted on 3500 acres.

An indispensable piece of equipment in the roads program is a Caterpillar Diesel D-12 motor grader.

Bruce P. Mety is woodlands manager and chief forester.

Logs are bunched in the woods and loaded out on trucks by an American Hoist & Derrick crane mounted on a six-wheel drive surplus C-2 Air force wrecker.

Trucking to the mill is effected

Top: When hardwood flooring is to be prefinished a removable table spans the sorting feed belt on which the lumber goes to a wide belt feed to this Yates American sander. The use of the belt reduced operators from two to one. In this picture the man in the rear services all of these machines. Center: From the sander the belt carries the flooring into the finishing room where it goes through this spray booth to receive a coating of varnish stain. This is dried with hooded infra-red lamps; afterwards a wax coating is applied, dried with infra-red and polished and bundled. Below: Mack diesel 8-wheel truck and its trailer will carry two tiers of 18 foot logs, mixed loads of long or short logs.

with International units with tandem pole trailers and two big Mack six-wheel tandem power units. The most recent additions to the fleet are two big 8-wheel Mack diesel tandem power units drawing Model T-4000 Birmco Bearcat 4-wheel trailers equipped with under-carriages providing a minimum 9-foot axle spacing and self-steering features which permit the units to negotiate woods roads. The trailer will carry two tiers of 18-foot logs; mixed loads of long or short logs.

Unloading at the mill is aided by a Caterpillar D-4600 powered American Hoist & Derrick crane, which also feeds the log chain. Other mobile equipment is at hand for log handling or performance of other tasks.

The company had previously shrunk the spreading distances between the mill's units through the use of straddle and lift trucks; installed a semi-automatic stacker and unstacker; modernized and enlarged its dry-kiln capacity; put long green and dry sorting chains into operation. E. J. Gibbs is plant superintendent.

The planing mill has been almost completely outfitted during the past few years, but with a few items still coming or at hand for installation. The newest machine is an S. A. Woods No. 415 double-profile matcher with an automatic feed table. Ahead of this is a smooth end trimmer driven by Link-Belt gear and chain. On hand but not installed was a Stetson-Ross automatic-feed tilt-table. The company has already saved a man in feeding the machine; will save another when the tilt-table is in. When the installation is complete the machine will process 560 feet per minute.

On the hardwood flooring line, the company has a 502-M S. A. Woods flooring machine and a new No. 465 S. A. Woods surfacer with direct drive and automatic feed, a man being saved here. When standard flooring is run, the pieces drop to a belt to the sorting bins. However, the company has a pre-finish line which is reached without further handling by putting a movable section in the flooring line to span the sorting bin belt.

The graded material moves continuously on belts and chains until it passes through a Yates-American sander to enter the finish room in which there is a 150-foot table. The flooring is carried on the belt in two sections of five lines each. The ends are caught in tongue and groove ahead of the sanding. The first step inside is spraying of the finish with a DeVilbiss machine. This is dried with infra-red lamps. The flooring is then waxed, dried again, and polished. Leaving the room on the belt, it is wire tied into bundles. Clifton Brown is foreman in charge of planer and flooring plant.

Top, left to right: (a) W. R. Warner, General Manager, Southern Lumber Co.; Clifton Brown, planer foreman; J. R. Boswell, Superintendent, Gulf Lumber Co. Below: Left to right: Earl Schindler, Southern Pine Association mechanical efficiency expert; H. C. Berckes, R. H. Brooks, Brooks-Pollard, Little Rock, Ark.; A. T. McDonough, mill manager of Crossett Lbr. Co., Crossett, Ark.

An interesting discussion of mechanical advancement in the southern industry followed the mill tour and a luncheon arranged by the host company.

The visitors were welcomed by Mr. Warner, who spoke briefly of the improvements they had seen, saying these are merely forerunners of more study and application of mechanization.

H. C. Berckes, Secretary-Manager of the Southern Pine Association, referred to the cycle of mechanization and recurring interest over a 30-year period.

Mechanical methods and devices to speed up production or reduce manual labor in handling were described by manufacturers participating in the session. These included:

A. W. Dainwood, Kirby Lumber Corp., Silsbee, Texas, said they had bought three new Filer & Stowell carriages and set works; had replaced 12-inch guns with 14-inch guns. The (new) traveling nigger, he said, is satisfactory but not increasing the cut too much.

James B. Edens, Edens-Birch Lbr. Co., Corrigan, Texas, said they put sliver tooth arrangements for their band saw; put in Ross and Hyster carriers; put their drive-ways in the center of the sheds.

J. R. Boswell, Gulf Lbr. Co., Mobile, Ala., described their handling of truck load green lumber; an arrangement of V-60 re-saw with an air-kick-off at the back that saved a man; a mechanical stick setter; a portable log debarker. An Oilgear feed installed in one of their mills, he said, is one of the slickest things he's seen.

A. T. McDonough, Crossett Lbr. Co., Crossett, Ark., spoke of the modernization of their mill.

Freeman Tignon, Ozan Lumber Co,. Delight, Ark., described their re-saw arrangement—through the horizontal first; then the vertical. They do not edge ahead of drying. Circular saws may be replaced by band mill in the head-rig.

L. H. Love, Union Sawmill Co., Huttig, Ark., described the modification of small, old mills to increase production. Fred Wilson, of the same company, contributed some facts to the general discussions.

Joe Dunlop, Dierks Lumber Co., DeQueen, Ark., gave a talk on need for a safety program in sawmills; said the insurance cost is too heavy a tax on the payroll.

REMOTE CONTROL OF THE SAWMILL CARRIAGE

By
MILTON H. MATER,
Managing-Owner, Mater Machine Works, Licensed Professional Engineer, State of Oregon

Remote control, long a dream of men who work with machines, is now a reality in the sawmill industry, particularly on the sawmill carriage. Unlike the steel industry where the handling of the white hot steel billets made controlling machinery from a distance—remote control—an immediate necessity, the lumber industry has had little incentive for investing in remote control. In recent years soaring wages, an intensified desire to produce lumber more efficiently and economically, and an increased awareness of safety precautions has put sawmill men squarely in the remote control business.

On the sawmill carriage, the two operations which have until recently been done entirely by hand are setting and dogging. The development of remote control setworks and remote control dogging now permits replacing these men on the carriage with automatic mechanism. The mill owner is benefited because automatic dogs are more efficient than manual dogs, and don't draw wages. The men are spared the danger of the shock of starting and stopping, and of flying splinters and loose bark.

The Remote Control Setworks

Until recently the delicate setting operation could be performed only by a man right on the carriage where he could handle the setworks. War time development of various "follow the pointer" systems and other remote control apparatus now make it practical for remote control systems to operate a carriage setworks.

The remote control setworks systems for carriages have been made possible by the wide use of direct drive electric setworks. These setworks consist of an electric motor connected through a gear reducer to the setshaft. In this type of setworks, a dial is provided for the setter. The setting dial is controlled by a limit switch which switches off the electric setworks motor and applies the brake when hit by the moving arm. There pre-set setworks operate effectively and accurately, but become slightly erratic at speeds of over 15 feet per minute set-out. This defect can be remedied by a new device used for the direct drive, limit switch control type of setworks—the air motor. The set-out speed of the air motor can be made very high, because there is no flywheel action in an air motor.

Built like a radial engine, the air motor turns an internal cam to which the drive shaft is attached. Instead of a magnetic brake the air motor uses solenoid controlled switches. These trap the air in the cylinders and bring the motor to an immediate halt. The Gardner-Denver Company has been experimenting with the application of the gear head air motors on setworks. At the present time they have three air setworks operating. Hydraulic pump and motor units have been used in a similar fashion.

It is on these latest type of setworks—the ones which depend for accuracy on a limit switch stop rather than on mechanical stop as in the older Trout types of setworks—that we depend for our remote control system. It is obviously very difficult to rig up a unit that will set a Trout type of pre-set arm and lock it in such a fashion as to provide a mechanical stop. However, limit switches in an electrical line can be placed almost anywhere.

Difficulties in Pre-Setting

The difficulty of pre-setting is due to the complicated data which must be immediately available to the setter.

(1) He must know the position of the log on the carriage in terms of the distance from the saw to the knees.

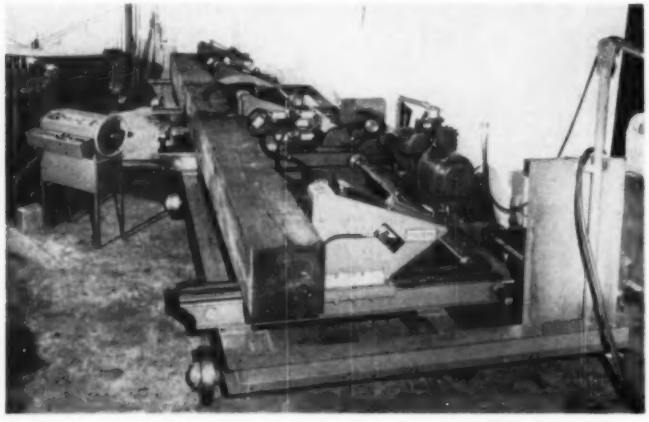
(2) He must be able to pre-set the distance which the sawyer desires to set out the log for the next cut.

(3) After making his set, he must be able to determine that the setworks actually has set the log out the pre-determined distance.

Self-Synchronous Motor Solves Difficulties

Obviously, gathering the above data into one setworks mounted off the carriage is very difficult. Yet, the problem has been solved. The development of the self-synchronous motor makes this transmission of data from one point to another through electrical wires a simple task.

The self-synchronous motors are arranged this way. Two specially wound motors are connected by



Remote control carriage such as discussed in article. Controls are on box at left. Push buttons control the dogs and blowers, and also start the setworks motor. Handwheel sets setworks dial. Note air compressor and motor mounted on carriage frame. Carriage built by Mater Machine Works, Corvallis, Oregon. Setworks built by Sel-Set Co., Salem, Oregon.

three wires. Both motors are then connected to a single phase source of current. When the rotor of one motor is turned, a change of phase in the relationship of the magnetic fields of the rotor and stator takes place. This causes the other rotor to turn.

The net result is that when the shaft of one motor is turned, the shaft of the other motor will turn exactly the same amount. For instance, if the shaft of one motor is turned ten degrees, the shaft of the other motor will move ten degrees, also. This holds true for any practical distance that the two motors might be separated. The General Electric Company has done a good deal of work with these Selsyn motors; they are readily available in various sizes.

While many attempts have been made to use these self-synchronous motors for remote control operation in the sawmill, the first successful one which was put into use on a sawmill carriage and has been used continually for the past two years was developed by Ted Balch of the Sel Set Company, Salem, Oregon. In adapting the remote control system to our own carriage, we have used the Sel Set equipment.

In using the Selsyn motors on a carriage setworks, one motor is placed on the carriage. Its shaft is connected to the setshaft by means of a chain and sprocket gear arrangement. The other motor is placed off the carriage at the setter's position (or, if the sawyer is to do his own setting, at the sawyer's position) and connected to a dial. The dial is calibrated and marked off so that it reads the distance from the saw line to the face of the knees in inches. It is then a simple matter to calibrate another dial parallel to the first one, on which the sawyer can then set the desired reading. The system then becomes an inverted "follow the pointer system," which has been used so successfully in artillery fire control instruments. In this case the Selsyn pointer follows the manual dial.

The Selsyn motor enables the setter to know where the knees are at any particular time with relation to the saw line. The manual dial has on it a limit switch which is tripped by the Selsyn dial. Suppose the Selsyn dial reads 30". The setter wishes to cut a 2" board. He sets the manual dial to 28". By a separate circuit he causes the setworks motor to revolve so that the knees move forward. The setworks motor circuit is interrupted by the limit switch on the Selsyn dial; thus, when the two dials are pointing at the same number, the limit switch interrupts the circuit and the setworks motor is shut off. In using an electric motor it must be equipped with a solenoid activated brake, and also must drive through gears in order to slow down at high speed to the set-out speed desired on the setshaft.

Additional Improvements with Air Motors

When using air motors the circuit which is interrupted by the dial limit switch is the solenoid valve circuit.

The Valvair valve lends itself very readily to successful use in air motor control circuits. For accuracy with an air motor the air must be cut off sharply. Since the main advantage of the air motor for setworks accuracy is the fact that it has practically no flywheel action to be overcome in quick stopping, the entire accuracy of the setworks depends on the sharpness of the valve action. Solenoid valves give this necessary sharpness of action. The Gardner-Denver reversible air motor, which has been the basis of the air motor setworks experimentation, has two inlets, one for each

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direction of rotation. When the air moves into one inlet, the other inlet acts as a back pressure release from the cylinders. The 6 H.P. unit is designed like a radial engine with five cylinders mounted around a crank shaft housing. The gear head is then attached directly to the crank shaft housing. Besides the two inlets mentioned above, there is also an exhaust port. This exhaust port acts for both directions of rotation.

Experimentation proved that in order to get a truly sharp stop with the air motor, it was necessary not only to shut off the inlet for the direction of rotation which was being used, but also the exhaust port and the other inlet which was acting as a pressure release. When all three ports were shut off at once, the motor stopped so sharply that there was actually a quiver in the drive chain. Experimentation proved that proper operation of the valves caused a sharp stop which enabled the accuracy to be maintained at less than 1/32" error in four feet of travel in two and four inch set-outs. This error varied only from an immeasurably small amount to a possible 1/32" throughout the set-out. When it is realized that this is the total error of the setworks (including inaccuracies in the line-up of the Selsyn motors, plus limit switch inaccuracies, cumulative inaccuracies of the motor drive chain to the setshaft, and of the head-block drive chain), it is obvious that this is very accurate indeed.

The other large factor to consider in comparing the accuracy of the air motor type of remote control setworks with older types of setworks, is the fact that there is no reason for an increasing inaccuracy, except leaking valves. If properly lubricated, the valves will remain leak-proof for years. If necessary, however, new seats can readily be installed in the valves which we have used. Automatic oilers, such as the Norgren or Arnold lubricator, are installed in the air system.

Design of Sawmill Carriage for Remote Control

In designing a sawmill carriage for remote control operation, we must take into account that a man is not available for duty on the carriage. This makes the placing of bark blowers in the knees of great importance, and, in the smaller mills, makes it almost imperative to have a mechanical log turner.

On the other hand, with a man off the carriage, we no longer have to worry about a safe speed for running the carriage back and forth, nor do we have to provide a seat and decking for the carriage.

Basic Carriage Structure

The basic carriage structure for a remote control carriage is, of course, like the standard controlled carriages. Several additional factors must be also considered. In our normal carriage design we weld an air tank into the steel frame of the carriage parallel to the bumper. We then mount the air compressor and its drive motor on the air tank, properly cushioned against vibration and jar. While a 5 H.P. compressor giving 29 cubic feet per minute of free air is sufficient for a normal air dog carriage with flippers, the addition of the air setworks motor makes it necessary to increase the volume of air available by using a 47 cubic foot, or a 10 H.P., compressor. For this purpose a Schramm, four cylinder, single stage compressor proved very compact, since its drive motor is coupled directly to the crank shaft of the compressor.

On standard design, one-man, air carriages, the air hose usually runs from pipes which are connected to

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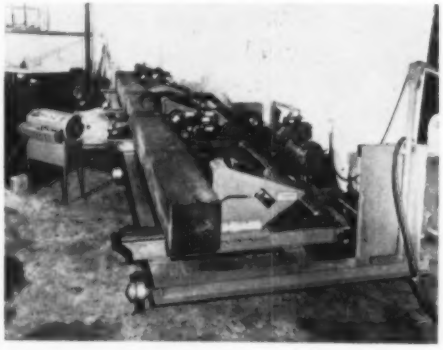

At Left:

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2. Promotes safety.
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a main circular manifold, situated near a manual setworks. In this case, since solenoid valves were to be used, it was decided to place the valves on the knees. This did away with the need for a circular manifold, and the air hose was piped directly from the tank to the knee. This simplified the whole problem of air connections on the air carriage.

The air motor used as a setworks drive is mounted on the air supply tank, with its control valves mounted on the motor mounting plate. A chain drive connects the motor to the setshaft. The remote control Selsyn motor is similarly connected to the setshaft.

The four boss dogs in the knees are controlled by individual buttons, as well as by a master button. In the case of a long, four block carriage this is necessary so that if a thin back board is desired on a log, the boss dogs will not protrude and hit the saw. The hook dog is controlled by a separate push button, and the four blowers are controlled by a single push button.

Except for the blowers, all of the valves on the knees are double solenoid valves. This is a safety feature. If the electricity is suddenly shut off while the dogs are engaged, they will remain engaged until the electricity comes on again. If the dogs are not engaged, then they will remain unengaged.

Three-push-button equipped sawyer levers are available with the remote control system. One lever is connected to the log turner so that the dog push buttons can be pressed to release and set the dogs when the sawyer wishes to turn his log, and the third button to the blower; this can be pressed while the log is being turned. On the sawyer's lever the push button controls the setworks. One button will cause the setworks to set out, while the other will cause it to recede. The buttons start the setworks motor moving. The automatic remote control setter stops the setworks at the knee's proper position. The third button on the sawyer's lever is an emergency stop button.

What of the Future?

The mill of the future will undoubtedly become as efficient and as completely equipped with labor saving devices as the great steel mills are. The introduction of the remote control systems into the sawmill field is a step in the direction of automatic milling. The remote control machinery discussed above is not limited to the setting of the knees on a carriage only. This is only a beginning. Already resaws with remote controls are operating in some mills. Experiments have been made with remote control edger shifters. Remote controls have many applications on sorting tables and spotting chains. Remote control machinery is not very far off for general acceptance in the sawmill field.

Wind Downs Wisconsin Trees

Thousands of Wisconsin's largest forest trees are down, victims of the high wind that swept the state on October 10, a survey by the conservation department shows. Leif Steiro, department forest supervisor, estimates that about 3,000,000 board feet of hemlock were blown down in the Flambeau river state forest. The wind push was strong enough to take down the tallest and most mature trees while the less mature and smaller evergreens were left standing.

Canby Shingle Co., Inc., Canby, Ore., has recently gone into the manufacture of standard grade shingles.

Karl L. Janouch will become industrial forester of *Southern Oregon Sugar Pine Corp.*, Medford and Central Point, Ore., at end of this year. He has been supervisor of Rogue River National Forest since 1933.

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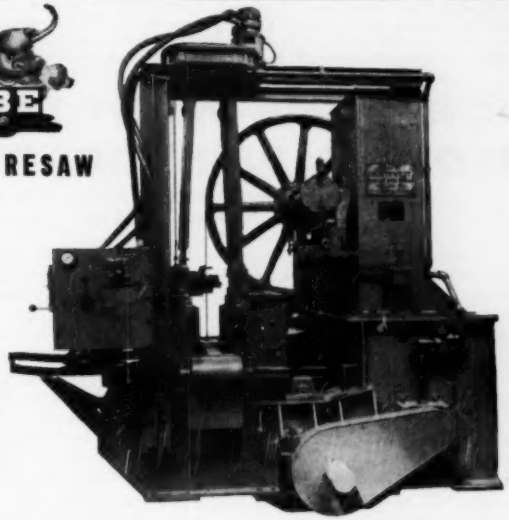

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Breakfast meeting of Trustees. Front row, left to right: G. F. JEWETT, Potlatch Forests, Inc., Spokane, Wash.; C. D. ORCHARD, Deputy Minister of Lands and Forests, Victoria, B. C.; E. C. RETTIG, Potlatch Forests, Inc., Lewiston, Ida.; EDMUND HAYES, Weyerhaeuser Timber Co., Portland, Ore.; W. R. SCHOFIELD, secretary-manager California Forest Protective Assn.; MISS CORRINNE WOODRUFF of Portland office, Western Forestry and Conservation Assn.; CARL V. HERSEY, assistant secretary and assistant treasurer of the Association; Standing, left to right: C. S. COWAN, Washington Forest Fire Assn.; and treasurer of WF&CA; E. B. TANNER, Portland, Ore., who was elected president for the coming year; P. D. EDGELL, Northern Pacific Railway Co., retiring president of the Association; CLYDE S. MARTIN, Weyerhaeuser Timber Co., Tacoma, Wash., secretary of the Association; E. R. ASTON, Biles-Coleman Lumber Co., Omak, Wash., vice president of WF&CA; GEORGE NEFF, Anaconda Copper Mining Co., Lumber Department, Bonner, Mont.; STUART MOIR, Forest Counsel, Western Forestry and Conservation Assn., Portland, Oregon.

FORESTERS WANT LESS FEDERAL PARTICIPATION

SPEAKERS DECLARE STATES AND PRIVATE OWNERS CAN HANDLE FORESTRY PROBLEMS WITHOUT FEDERAL INTERFERENCE

That the western forest industries want as little federal participation as possible in the handling of forestry, logging and manufacturing activities, was plainly indicated at the recent 40th meeting of the Western Forestry and Conservation Association in Portland December 8-10. Never before at an industry meeting have so many speakers from so many different parts of the country advocated a "hands off" policy on the part of the government.

Typical of such statements was that by Wendell Robie, vice-chairman California State Board of Forestry who concluded a stirring report by saying:

"It is apparent the people of California like their part in state administration of their own forestry affairs. This question is frequently heard: 'Why freight local money to Washington to do a local job when only part of it gets back after federal expenses are deducted?' "

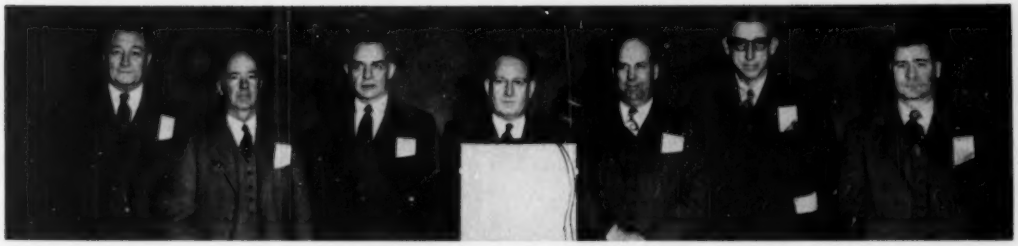
Col. W. B. Greeley, vice-president West Coast Lumbermen's Association, in urging the forest industry to take the lead in forest matters rather than permit themselves to be pushed around said, "I was often impressed by E. T. Allen's strategy in keeping industry in the lead. He wanted forest owners in the front, with constructive proposals of their own; not perpetually pushed around in self defense."

George B. McLeod, San Francisco, president, Hammond Lumber Co., said, "It would be a sad thing that after all these years and all the industry has done to further the cause of good forestry and forest management, to have the government come in and expropriate the privately owned timber."

R. A. Colgan, Jr., manager, National Lumber Manufacturers Association said the industry had gone a long way in doing its own job of forestry. He questioned the acceptance of an increasing volume of federal funds. He said the local counties, the states an private owners are better able financially to carry on the work than the federal government which is now and has for a long time been operating in the red.

Roger L. Guernsey, Idaho State Forester, said that "in Idaho today

Panel of Forestry Action programs in the states. B. L. ORELL, Washington State Forester; W. P. PILGERAM, Montana Commissioner of State Lands; EDWARD WOOZLEY, Idaho State Land Commissioner; Governor C. A. ROBINS of Idaho; E. R. ASTON, chairman of the panel; C. D. ORCHARD, deputy minister of lands and forests, British Columbia; WENDELL ROBIE, vice chairman California state board of Forestry; PAUL M. DUNN, Oregon State Board of Forestry.



Panel on forest committee reports. STUART MOIR, forest counsel; THORNTON T. MUNGER, chairman of West Coast forestry procedures committee; T. B. PLAIR, chairman forests soils committee; P. D. EDGELL, Northern Pacific Railway Co., president of the 40th conference; E. R. ASTON, Biles-Coleman Lumber Co., chairman of committee reports session; W. H. GREELEY, vice president West Coast Lumbermen's Association; L. T. WEBSTER, chairman nursery practices committee. Philip A. BRIEGLEB, chairman of second growth management committee, a member of this panel, is not shown in this group.

everyone works at Forestry. We can handle the problem in Idaho with less and less federal funds."

Forest Protection Costs Mount

One of the highlights of the meetings was the address by Col. Greeley. In it he called attention to the steadily increasing costs of forest protection work, which he said was to be expected in view of the more intensive protection now demanded by industry and by reason of the expansion of the industry itself notably the pulp industry in the South and West.

He said "'adequate protection' today is a horse of an entirely different color from the nag of 1924." In commenting on the future Clarke-McNary program Col. Greeley said:

"To my thinking, the big question in our future Clarke-McNary program is how far should the government put up 50 cents out of every dollar for a constantly rising level of 'adequate protection'? It would be easy to let this popular expenditure of the taxpayers' money roll up into an industry subsidy, with all the earmarks of the welfare state. That is exactly why the lumber associations asked the Congressional Committee to 'stop, look, and listen' before it wrote a new authorization of twenty million dollars into the law.

"It is in my mind that the time has come to set our sights on a more exact target, in determining from time to time what is the fair share of forest protection to be borne by the federal treasury. Instead of 50 per cent of what is adequate, which makes the sky the limit, could we not say: *'50 per cent of what is essential;'* not one-half of the protection ceiling in every state; but one-half of the *protection floor*, of the necessary, rock-bottom cost of a protection system.' For example, there are still 93 million acres of forest land in this country without any organized protection from fire. No one will disagree that Uncle Sam should match dollars with the states and forest owners in providing a patrol organization for this area.

"The Clarke-McNary policy would then mean federal cooperation with every state, 50-50, in establishing the floor of essential protection on all of its forest lands. Above that common minimum, it would rest with the state and its forest owners to determine the intensity of their protection and how its cost, above the floor, should be borne between them.

"It may not be easy to translate this idea of a protection floor into a working formula that can be applied fairly in all the cooperating states. But I am sure it can be done—by the Western Forestry and Conservation brand of cooperation. As E. T. Allen so often urged, let the industry take the lead. Don't wait to be caught in the bight of the line or pushed around when the public gets fed up on the 50-50 type of federal money grants. We have an opportunity to demonstrate again the power of three-way cooperation, as this Association did forty years ago."

New Products from Wood

Another highlight of the conference was a talk by Clark C. Heritage, technical director, Weyerhaeuser Timber Co., in "New Products from Wood. The Contribution of Research to Better Utilization." In his talk he said it is basic that a product must be attractive and cheap enough to interest the consumer and it must be manufactured at a cost which yields a satisfactory return to the producer. He said another basic fundamental is that there be precise knowledge of the supply of raw material, its location, size, form and availability. He declared the forest industry has made recent progress in segregating its raw material and integrating manufacturing operations. He said the barking of sawlogs "now coming fast, is a most important favorable contributing factor to product development. Examples of higher value return and more complete utiliza-

Left to right: PETER H. MAZZETTI, State Forest Master, BAD ISCHAL, Austria; ARNOLD ELSAESSER, forest director, Chamber of Agriculture, Styria, Austria; JAMES K. MACE, California state division of forestry, who discussed that state's cooperative rural fire protection; GEORGE H. SCHROEDER, Crown Zellerbach Corp., Portland, Oregon, who advocated closer correlation between the state forest practices administrators and the field inspection personnel.

Panel considering the incendiary fire problem. ROGER L. GUERNSEY, Idaho State Forester; J. H. WALKER, Southwest Oregon Protective Assn.; DON LEE FRASER, Washington State Forestry department; WILLIAM FAIRBANK, California Division of Forestry.

Presenting Essay awards. Left to right, P. D. EDGELL, president of 40th Conference; DEAN LOWELL BESLEY, school of forestry, U. of B. C.; WARREN B. GAYLE, University of B. C., winner of $100 first prize; LOUIS W. POWELL, O.S.C., winner of $75 second prize; DEAN PAUL M. DUNN, school of forestry, O.S.C.

Panel on Keeping Protection Roads Open by Use of Chemical Sprays. C. S. COWAN, Washington Forest Fire Assn., chairman; WM. H. LARSON, Washington Forest Fire Assn.; VANCE L. MORRISON, Oregon Protection System; PHILIP A. BRIEGLEB, chairman of second growth management committee.

Panel on suggestions for meeting the increasing slash hazard. W. R. SCHOFIELD, California Forest Protective Assn.; IRA ANDERSON, Boise-Payette Lumber Co.; DWIGHT PHIPPS, assistant State Forester of Oregon; L. T. WEBSTER, assistant State Forester of Washington; D. B. TAYLOR, assistant district forester, B. C. Forest Service; KERMIT LINSTEDT, U. S. Forest Service, assistant regional forester in charge of fire control.

tion through integration and diversification are now quite common not only in the case of the larger companies but at the community level."

Mr. Heritage said the field of wood utilization may be likened to a high building having five products corridors as follows: Natural Wood Products, "Wood as pieces of wood"; Densified Wood Products; Wood Particle Products; Fibre and Fibre Products; Chemical Products.

The first corridor or room represents ordinary lumber, fabricated products, and plywood with its overlays, hardwood faced panels, striated panels, etc; Then there is the division of densified products, wood made harder by use of additives, costly products but items finding new uses; Then there are the wood particle products, such as fuel, wood flour, sander dust, hardboards, insulation boards, and bonded items, etc.; Then come the fibre products which range from whole wood fibre to cellulose products including a great variety of pulps; Then finally there are the chemical products. The speaker predicted a revival of interest in wood distillation. He spoke of the lack of utilization of Lignin. There is also the field of bark utilization, now growing; also the use of decayed wood, a field which the speaker said he thought had possibilities.

Mr. Heritage concluded by saying that "economics will finally give the decision on success or failure of each project."

Finland's Forest Program

Corydon Wagner, vice-president, St. Paul & Tacoma Lumber Co., Tacoma, Wash., who was an official industry representative at the Helsinki, Finland, world forestry conference, said that Finland is the world's greatest tree farm. He said in Finland there are no federal controls as such exist. There are regional boards which settle any problems which may arise. "There is complete integration of manufacture in Finland," said Mr. Wagner. "No wood is wasted. Few trees are more than 12 inches in diameter. It takes 120 years to grow such a tree. Forest growth exceeds drain by about ten per cent. Finland has accurate timber inventories and keeps them current. We need such an inventory in this country. The average return for lumber for 1948 in Finland was about $84 per M. Stumpage cost was about $20.50. Denmark is striving to develop a super Douglas fir and hopes to be able to sell us seeds."

Selling Forestry to the Industry

W. D. Hagenstein, forest engineer, Pacific Northwest Forest Industries, said that forestry had been sold the Northwest lumber industry because owners became convinced it was good business. He said:

"If there be any general formulae for 'selling' a landowner his business opportunities in tree growing, they might be set down as follows:

"1. Dispel false notion that tree planting is forestry.

"2. Treat fire protection as an insurance risk with annual premiums invested therein commensurate with the values at stake.

"3. Demonstrate that all kinds of forest material other than big, prime, old-growth logs have value.

"4. Use the 'bookkeeping' approach by setting up an accounting statement of the rates of return from investment in trees which shows their increase for the first 50 to 80 years of their life at an increasing rate of interest and compare with returns from other investments.

"5. If the prospect is a wood user, calculate the cost of raw material from timber grown by himself as compared with the rising trend of stumpage prices on the open market.

"6. Bury once and for all the old fallacy that time required to bring a timber crop to maturity is too long by emphasizing properly instead that even though a harvest may not be reaped from each acre each year, *a growing forest does produce an annual crop of wood.*

"7. Plow out of any calculations for a timber growing prospectus the iniquitous and arithmetically absurd compound interest bogey with which all too many

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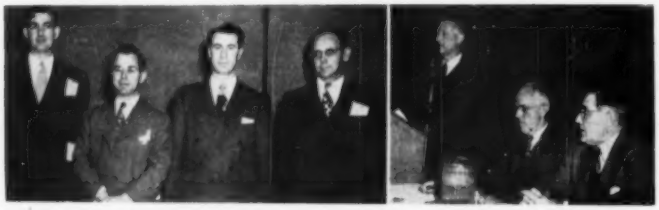
E. L. KOLBE, Western Pine Assn., chairman of forest insect control panel; DR. W. L. POPHAM, assistant chief, bureau of entomology, Washington, D.C.; H. A. RICHMOND, Dominion Entomological Laboratory, Victoria, B.C.; JOHN B. WOODS, Jr., Assistant State Forester of Oregon.



Cooperation with forest land owners by forest industries: W. D. HAGENSTEIN, Chief Forester, West Coast Lumbermen's Assn.; E. L. KOLBE, Chief Forester, Western Pine Assn.; JOHN S. MOTTISHAW, Chief Forester, Bloedel, Stewart & Welch, Ltd.; KNUT LUNNUM, director of Washington's "More Trees" program. Looking ahead to the next 40 years: Left: CORYDON WAGNER, vice president St. Paul & Tacoma Lumber Co. Center: EDMUND HAYES, Weyerhaeuser Timber Co., chairman of panel. Right: CLARK C. HERITAGE, technical director, Weyerhaeuser Timber Co.

Cooperation with forest land owners by public agencies: DEAN D. S. JEFFERS, school of forestry, U. of Idaho, chairman of the panel; T. F. ARVOLA, California Forest Manager; RUTLEDGE PARKER, Montana State Forester; B. L. ORELL, Washington State Forester; GEORGE SPAUR, Oregon State Forester; ROBERT W. COWLIN, Pacific Northwest Experiment Station; ROGER L. GUERNSEY, Idaho State Forester.

foresters have been guilty of proving that no one can afford to grow trees."

A. Whisnant paid a tribute to the late E. T. Allen, for years forest counsel for the Western Forestry & Conservation Association, and who was largely responsible in shaping the first forest legislation including the Clarke-McNary Act which is still considered the cornerstone of cooperative forestry in the United States.

Speaking for the U. S. Forest Service R. E. McArdle, assistant chief, told of a number of cooperative programs. He said cooperation between the federal government, state and private interests is not dead. He said the main difficulty in such cooperation is in the realm of policy making rather than in the field.

Urges Sale of Crown Grant Lands

John S. Mottishaw, chief forester Bloedel Stewart & Welch Ltd., Port Alberni, B.C., in discussing land tenure in B.C. made the recommendation that the government sell 50 per cent of the crown timber lands.

Jack Taylor, State Land Commissioner of Washington, pointed to the need of an inventory of the state's timber holdings. He said the state does not know how much timber it owns.

President P. D. Eddell presented checks to the winners of the association's third annual essay contest. First prize of $100 went to Warren B. Gayle of the University of British Columbia. Louis W. Powell, of Oregon State College, wrote the essay which wins second prize of $75. The subject was "Significant Trends and Developments in Forest Fire Protection."

President Edgell introduced past presidents George B. McLeod, Edmund Hayes, Fritz Jewitt, George L. Drake, Kenneth Walker. Frank Lamb, Hoquiam, Wash., who attended the first meeting, was also introduced.

Many reports on progress of forestry and new developments in the various western states and British Columbia were presented.

E. B. Tanner New President

E. B. Tanner, Portland, manager of the Wright-Blodgett Co., was elected president for the coming year. Stuart Moir was re-elected forest council; Clyde Martin was re-elected secretary and C. S. Cowan, treasurer. C. V. Hersey was re-elected assistant secretary-treasurer.

Forest Insect Control

Forest insect control was treated by a panel chairmanned by E. L. Kolbe, chief forester of Western Pine Assn. First speaker on this panel of specialists was Dr. W. L. Popham, assistant chief, Bureau of Entomology, Washington. D. C., who said that only rather recently have developments indicated means of combatting forest insect infestations within the practicality of forest values concerned.

H. A. Richmond, of Dominion Entomological Laboratory, Victoria, B. C., pointed out the need for re-evaluation of insects in forest economy.

Reviewing the insect control program in Oregon, John B. Woods, Jr., assistant state forester, told of the 1949 spruce budworm aerial spraying project carried on in the Douglas fir region of the state, covering 267,000 acres at cost of $1.07 per acre. This project was 97% effectice, according to Woods. A much larger control project is planned for the coming season.

Fire Protection

The final day of the conference featured aspects of fire protection and prevention, with C. S. Cowan, chief fire warden, Washington Forest Fire Assn., presiding as chairman.

The first topic considered was the keeping of protection roads open by use of chemical sprays, experted by Vance L. Morrison, Oregon protection system, and William H. Larson, Washington Forest Fire Assn. Morrison said his work in this field has shown a combination of 2-4-D and 2-4-5T giving most constant results on individual species and on a combination of woody-plant species. His organization is convinced that chemical control of woody plants along protection roads should be a practical means of maintenance. Almost 100% kill results from treating small alder and willow, and a satisfactory

pruning effect occurs on all large alder over 10-12 ft. in height. He said that a rain occurring within a few hours after application reduces effectiveness of the treatment. Water standing on the leaves at time of application is thought to aid in diffusion of the chemical, thus making the spraying more effective. A complete application was found necessary for a complete kill.

A panel discussion of "The Incendiary Fire Problem" featured the following participants: J. H. Walker, Southwest Oregon Protective Assn.; Don Lee Fraser, Washington State Forestry Department; Roger L. Guernsey, Idaho State Forester; and William Fairbank, California Division of Forestry. It was brought out by the speakers that incendiary fires are caused chiefly because of conflicts in land use philosophies.

Slash Hazard

L. T. Webster, assistant Washington state forester, was lead man on panel considering "Suggestions for Meeting the Increasing Slash Hazard." He placed particular emphasis on the need for specialized weather forecasting, especially fire-weather forecasting, as a vital aid in forest management. Kermit Linstedt, U. S. Forest Service, suggests first utilizing intensively, then plan and execute burning for the best possible forest management. He said that staggered setting plan of timber harvesting has been a major aid in reducing slash hazard. Dwight Phipps, assistant state forester of Oregon, suggests more planning between private, state, and federal forest owners and operators, getting together to work out practical approaches to slash disposal. He does not recommend burning when not more than 30% of stand is removed. I. A. Anderson, Boise-Payette Lumber Co., said slash disposal in Idaho is considered both as protection problem and forest management problem.

W. R. Schofield, secretary-manager of California Forest Protective Assn., said that in cases where reproduction and leave trees remain after logging the actual fire hazard is increased by thickets of killed reproduction and trees not consumed by slash-disposal fire. He mentioned that numerous experiments and observations have proved that disposal of slash is not necessary from the standpoint of forest sanitation.

D. B. Taylor, assistant district forester, B. C. Forest Service, expressed a different tack on the subject, suggesting the following: Closer utilization minimizing residual debris; recognize disadvantages of spring burning; intelligent use of weather data by which intensified system of zoned closures are initiated; more intensified program of snag falling, and slash-burning adapted to conditions involved; combination of burning and strict regulation of cutting plans; making maximum use of natural fire breaks or leaving green breaks; fully coordinated follow-up planting program; and co-operative understanding between operators in respect to daily or periodic curtailment or closure of operations during periods of high fire risk.

GEORGE B. McLEOD, president Hammond Lumber Co.; R. E. McARDLE, assistant chief U. S. Forest Service.

George H. Schroeder, Crown Zellerbach Corp. forester, stressed the need of "in the woods" training program for inspector and supervisory personnel responsible for administration of slash disposal problems. Some of the lands on which burning is specified has a shallow soil-covering over rock. It was brought out by Schroeder, burning of slash is no guarantee that the area will not burn again.

James K. Mace, California state division of forestry, told of special development in his organization toward fire protection and suppression throughout a large area of the state.

Clyde S. Martin, Weyerhaeuser Timber Co., chairman of Clark-McNary committee of W.F.&C.A., said that dollar value is received for every dollar paid to western state forestry departments, which is not true of forestry dollars routed through Washington, D. C. He emphasized that the big need in forestry is to assist the small timber owner who is not in position to carry on desirable forest management.

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Very Modern Plywood Plant in France

Lawrence Ottinger, president, United States Plywood Corp., on his return from a European trip said he visited a plywood plant in France "which for quality of production and perfection of plant, is very much superior to anything which we have in this country."

Mr. Ottinger said the main sources of plywood in England and Europe are Scandanavian countries and Russia but that the United Africa Co., Ltd.'s new plant in Africa "is operating satisfactorily and probably will expand its operations."

No Waste in this Mill

(Concluded from page 72)

and Hyster arch, and two D7s, each with bulldozer and Hyster winch.

Two loaders in the operation aggregate about 100M feet of logs per day. One of these units is a 3-drum Washington powered by Dodge gas engine and the other a 2-drum Vulcan with 150 h.p. Waukesha engine.

Generally the logging season lasts about 10 months. The company has its own tug for handling and transporting logs from dump to mill. A pond saw using Oregon Saw Cox Chipper chain on 6′ bar saws logs to suitable length for the mill. This unit is powered with 10 h.p. G.E. electric motor.

The 65,000 ft. sawmill, in which logs are sawed primarily for grade, has an electric powered double-circular headrig with Portland Iron Works set works, log turner, stop and loader, and carriage operated by steam Spee-D-Twin vertical drive. Other processing equipment in the sawmill includes an Allis-Chalmers 6x48″ edger, Irvington swing cut-off saw, and a timber cut-off.

A section of the plant separate from the sawmill includes a 66″ Mershon band resaw and Yates-American planer to facilitate manufacture of lumber of highest quality and to be able to supply lumber in finished grades. Considerable of the mill output is for door stock. The lath mill employing four men, contracted to Larry Clark, manufactured 142,350 pieces of ½″x1½″ snow fence during the month of August, all of which stock was sawmill by-products salvaged from the "refuse" conveyor. This salvage runs from 8 to 10M board feet per day. Both lath and snow fence are manufactured in this department.

An Archer blower system throughout the plant transports fine by-products, such as sawdust and shavings, from point of origin to a cyclone discharging to a bunker—the same bunker into which hog fuel from the hog is discharged. From here it goes directly to the barge for transport to the pulp and paper mill.

Electric power used in the plant is purchased from P.U.D. Steam, used in lift cylinders, carriage feedworks, log turner, edger feed, is generated in a Willamette vertical boiler using crude oil fuel.

Lumber transport and handling facilities about the plant site and lumber yard consists of a Gerlinger lumber carrier and a ¾ yd. shovel with crane boom for loading lumber. This shovel, powered with 125 h.p. engine, is also used in the woods operations as needed for gravel and rock work.

Norman Duncan, general manager of Hegewald Lumber & Logging Co., previously carried on in business for himself at Lebanon, Ore., as owner of Duncan Lumber Co., a 30M sawmill, and co-owner of Fairview Logging Co. Other key plant personnel includes Floyd Shippey, master mechanic; Les Marshall, chief electrician; E. A. Monda, office manager; and J. C. Fuller, accountant.

Installs Nine-Foot Resaw

Powell River Co. has installed a new 9′ bandsaw headrig at its sawmill in Powell River, B.C. One of the unusual features of the installation was its overland delivery by truck and trailer all the way from Blue Lake, Calif., where Grizzly Park Lumber Co. has originally planned to use it.

The mill was shipped the final leg of the journey by barge from Vancouver, B.C., to the pulp and paper town, where it replaced an older type machine.

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LSM C-Coaster Serves Coast Lumber Shippers

The converted LSM *C-Coaster*, operated by W. R. Chamberlin & Co., San Francisco, well known shipping firm, made history this fall by calling at Florence, Ore., and lifting a cargo of lumber.

The *C-Coaster* is the first deep sea vessel to call for lumber at Florence since the port authorities improved the harbor facilities many years ago. The vessel was given a rousing reception. Mayor Paul V. Womer presented the keys of the city to Capt. Charles A. Anderson, skipper of the vessel. A. A. Eggum, operating manager of W. R. Chamberlin & Co., was present when the *C-Coaster* arrived at Florence and participated in the welcoming ceremonies. Charles Graden, port commissioner of Florence, also had a prominent part in the affair.

It has been about 15 years since residents of Florence have seen a deep sea vessel enter their harbor. The *C-Coaster* which draws less than 10′ loaded came in at cruising speed. After the welcoming ceremonies the vessel loaded some 600′ of lumber supplied by Patton-Blinn Lumber Co. and the Suislaw Forest Products Inc.

The *C-Coaster* was designed especially to serve West Coast sawmills. She was converted with quick loading, quick turn around, and unloading in mind. She has a cruising speed of 11½ knots.

Says A. A. Eggum, operating manager, W. R. Chamberlin & Co.: "The *C-Coaster* not only went into Florence in September but in October as well, on a weekly service. But before continuing the operation during winter months, improvements at the bar are necessary.

"The lumber industry in Oregon from Eugene to Florence is requesting the U. S. Army Engineers to make these improvements which are now commercially economical on account of this new type of vessel."

Southern Mill's Answer

(Concluded from page 76)

nating at the drop end trimmers. As the pieces start across, an operator at the near end can use a foot plunger to raise a roller that will lift the end of thick stock to pass it through a widened section of the primary roller bed so that it will go back through the resaw. The conveyor table and rollers serving the horizontal resaw are electric motor driven.

A grapple picks up logs to drop in the 20x40 ft. pond from which they are floated to the log chain.

The horizontal resaw is a 6-foot Filer & Stowell unit, and is equipped with magnetic brake which provides perfect control. Braking requires one minute now as compared with 21 minutes without it.

As the lumber passes beneath the trimmer operator's cage, a set of non-cylindrical rollers that bring one end to the proper position.

The vertical resaw a (5-foot Yates-American) feeds to a conveyor table carrying the lumber back toward the mill's center and to a roller bead terminating at the trimmer conveyor. Before reaching the trimmers there is another foot operated uptrust roller used to send any selected piece onto the rollers serving the vertical re-saw. Thus, any piece may be sent back through or any piece from the horizontal resaw may be sent also to the vertical resaw. The entire operation is by activated rollers; roller-bearings prevail instead of friction bearings; all lumber transfers are sidewise instead of lengthwise—a distance of not over 18 inches as compared with up to 24 feet. The installation as a whole is linked with the mill drive.

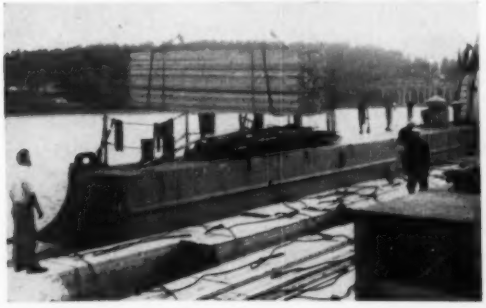
The green chain building extends at 90 degrees from the sawmill. The slabs with bark are drawn off at the upper level and are sent to the re-manufacture plant to salvage trim and small items. The re-manufacture plant has not been put "on its toes" as yet. The mill management is training the crew to make them perfectly at ease with the equipment arrangement before "going after" items that are wanted for quality.

The operation of the resaw arrangement has brought a material increase to the mill, not only in quality but in quantity. The removal of the edger and installation of the resaws increased the crew by two men, but the over-run has been stopped up to a solid average of 48 percent—of course on some days it runs higher (to 58%) the logs run serving as a factor. The increased cut from the logs averages about 30 percent per hour.

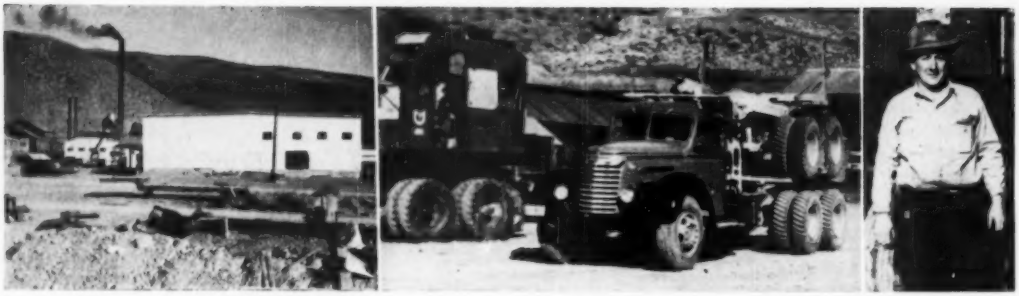
With the increased yield more than offsetting the addition of two men to the crew, there is a further interesting payoff in that under the previous sawmilling operation a yield of 3.9% of "C" and better was obtained. The records for November, 1949, showed a yield of 7.4% in "C" and better. The target for the mill is to treble the original yield of better grades.

It is stressed that the present Ozan sawmilling operation is but a trial step toward an arrangement for a new mill. It is in effect, a revamping of an existing set-up for a practical test of a production theory.

The Southern lumber industry has effected considerable over-hauling since the war days. Lumber carriers, lift trucks, improved dry kilns, newer and faster planing mill machinery have all become a familiar part of the picture. Now the industry is turning toward getting more from its logs.



Loading lumber on the C-Coaster at Florence, Ore. C-Coaster made history as she was the first deep sea vessel to enter the port since port authorities improved the port many years ago.



Left: The original and still operating Twisp-Wagner sawmill; new power plant, with old power plant stacks in left background; planing mill and box factory; extreme right, a portion of the 300 foot lumber storage and shipping dock, still under construction. Center: One of the five new GMC trucks with Wentworth & Irwin trailers recently added to the fleet of logging trucks. One of the company's Link Belt Speeder Cranes is shown at left. Right: Howard Weller, veteran logging superintendent for Twisp-Wagner Lumber Co.

TWISP-WAGNER TO BUILD 40 MILE TRUCK ROAD

An ambitious half million dollar road construction program has been launched by the Twisp-Wagner Lumber Company of Twisp, Washington. A four-year project, the finished system will include forty miles of main line logging road with a network of feeder roads and spurs opening up 106,000,000 bd. ft. of Forest Service timber on the Chewack River for the company.

Twisp-Wagner has recently consolidated all its organization in Twisp. Full scale operation has begun in the new box factory and planing mill, with power coming from a new steam-electric power plant. 100,000 bd. ft. of lumber, principally Ponderosa pine, are now produced on each shift of a two-shift day, much of the production going to the box factory for conversion to apple and pear box shook.

The logging operation functions the year around. During last year's very severe winter, only two weeks were lost. A forty-man crew averages 180 M. bd. ft. of logs per day. Additionally, thirty-five men are now working on right-of-way clearing and road construction.

Equipment for roadwork includes two D7 and two D8 "Cats"; one D8 "Cat" having just been acquired. Two old GMC logging trucks have been converted to six-yard dump trucks. Also in use are a carryall and a number of air compressors.

A fleet of five new GMC trucks with 477 cu. in. displacement gas engines pulling Wentworth & Irwin trailers have been added to the woods operations, making eleven logging trucks in all.

Howard Weller, logging superintendent, also has the road-building job on his adequate shoulders. Other key personnel assisting president Otto H. Wagner are: George Botchek, sawmill superintendent; Harold Wagoner, planing mill superintendent; Lance Downie, power house superintendent; Carl Borchard, dry kiln superintendent. The large capital investment made by the continuing fine leadership of the Twisp-Wagner Lumber Company makes it one of the most important pine mills in eastern Washington, and one of the top contributors to the industrial economy of the State.

Otto Lindh Becomes a Regional Forester

Otto Lindh, for the past three years assistant regional forester in charge of the management of the timber resources of the National Forests of New Mexico and Arizona, has been made regional forester at Albuquerque, N. M. As regional forester of the southwest Region of the Forest Service, he will adminster 13 national forests, covering approximately 22 million acres of land.

Relogging and Prelogging

(Concluded from page 85)

At the afternoon session Dr. O. Harry Schrader, Jr. reported on the work of the Washington Institute of Forest Products. He stressed the importance of the inventory of forest leftovers which has been made by the Institute. He said this information is vital to concerns considering manufacturing activities who want to be assured that there is an adequate supply of raw material. Dr. Schrader said the first inventory report should be ready about April 1. He also told of several other studies which have been made and of reports which are being prepared. One of the next major projects will be a market study, he said.

Prof. Frank Brockman, of the College of Forestry University of Washington, reported on the spruce bud worm projects in Oregon and in his talk said there has been an outbreak in southeastern Washington.

Dean Gordon Marckworth of the College of Forestry was re-elected president; and Chas. Cowan was re-elected secretary-treasurer.

Don Colwell, Cascade Lumber Co., Ellensburg; Bernard L. Orell, State forest supervisor, Olympia; P. D. Edgell, Northern Pacific, Seattle; and Herbert L. Plumb, supervisor Snoqualmie National Forest, Seattle, were elected vice-presidents.

New Post War Practices

(Concluded from page 70)

"At all mills visited there was no waste. Trimmer ends with any meat in them whatever went to a box factory; slabs and edgings and small ends were chipped for pulp. As most logs are barked in the woods to improve their floating properties, the slabs and edgings were all ready for the chippers as they came from the saws. The sawmill waste, in the form of raw material for the pulp mills, is usually transported from one to the other by overhead cable transfers with traveling buckets.

"Sawmill and woods waste is converted into innumerable products, depending on the type of integration at the individual mill. These consisted of groundwood pulp, sulfate pulp, talloil, charcoal, various creosote oil derivatives and acids, vinegar, soap and schnapps."

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***Douglas Fir Plywood is obtainable from our affiliated company, Pacific Veneer and Plywood Corporation, Bellingham, Wash.**

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CANADIAN FOREST PRODUCTS Limited

Red Cedar Shingle Output Increases

Reports of constantly increasing demand for Certigrade red cedar shingles accompanied by stepped-up production highlighted the 33rd annual meeting, Red Cedar Shingle Bureau, in Seattle on December 9.

Shingle producers from Washington, Oregon and British Columbia attended the convention and were given optimistic accounts of enlarged and expanded markets for cedar shingles as well as augmented production which promises to establish a new post-war record during 1949.

According to Bureau Secretary-Manager W. W. Woodbridge, the industry's productive capacity has been growing steadily since the end of World War II and currently is at a rate of approximately 7 million squares annually. Factors which are responsible for the increased cedar shingle demand, Woodbridge stated, include a record of storm and wind resistance established throughout the Middle West, acceptance for multi-unit housing developments by numerous large builders, and a tremendous increase in the use of shingles and processed shakes for side wall construction.

Bureau President E. R. Scott, Treasurer Virgil G. Peterson and Committee Chairmen Paul R. Smith, Charles Plant and R. H. Farrington presented reports at the meeting.

Of particular interest was Plant's disclosure that *the Bureau's membership roster,* increased by 17 mills and 63 machines during 1949, and that the organization's membership, *whose shingles are identified by the well-known Certigrade label, currently totals 112 mills with 617 machines.*

Scott was re-elected president of the Bureau for 1950, and Vice President W. H. McLallan also was returned to office. Other trustees elected for 1950 were: Dale Craft, N. A. English, R. H. Farrington, Keith G. Fisken, N. C. Jamison, J. A. MacKenzie, R. D. Mackie, Charles Plant, Fred A. Roles, C. C. Rose, Paul R. Smith, H. V. Whittall, Earl S. Wasser and R. A. Wilde.

"A Mountain of Mail" was the apt description of a huge pile of inquiries which made up an impressive display at the 33rd annual meeting of the Red Cedar Shingle Bureau in Seattle on December 9. Over 50,000 written requests for literature on cedar shingles were in the pile, most of them being inquiries on the Certigrade National Home, publicized nationally by the Bureau during 1949. Shown examining the "mountain" are, left to right, C. B. Sweet, president of the National Retail Lumber Dealers Association, W. C. Bell, managing director of the Western Retail Lumbermen's Association, W. W. Woodbridge, Bureau secretary-manager, and Virgil G. Peterson, Bureau treasurer.

Study Indicates Methods of Inducing Freezing of Truck Roads

A report has just been published in Finland outlining the best practices in freezing roads over which logs are to be hauled in winter. Exhaustive studies and experiments were made. The report states that the cheapest method of inducing freezing was to remove the snow. Another method used to induce freezing was to plow the road as early as possible in the autumn.

The study showed "that different soils affect the formation of frost according to their heat conductivity and thermal capacity. Mineral soils freeze deeper than peat soils. As the humidity of the soil increases, the depth of the soil, as a rule, grows and the thawing of the frost is retarded. In mineral soils thawing is more rapid than in peat soils. If snow is compressed its preventive effect on soil freezing is reduced."

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Otto Webber New President Tacoma Lumbermen's Club

Otto Webber, Webber Lumber Company, has been elected president of the Tacoma Lumbermen's Club succeeding Wayne E. James of the Karlen-Davis Lumber Co. Don Bowman, Cascade Pole Company was elected vice-president and Jack J. Pascoe, Karlen-Davis Lumber Co., was chosen secretary-treasurer.

Elected to serve on the board of directors during the coming year were Mr. James, Mr. Weber, Mr. Bowman, Bruce McLean, General Hardwood Company, Vince Besinque of St. Paul & Tacoma Lumber Company, Nelson Perkins of Douglas Fir Plywood Association and Paul Billings.

The new officers were installed at the Club's annual banquet on December 9 which was attended by more than 400 Tacoma lumbermen and guests from various parts of the Northwest.

Dr. Bror L. Grondal, College of Forestry, University of Washington, presented the Paul H. Johns, Jr. memorial senior award to Rollo F. England of Klamath Falls and the junior award to Lloyd H. Warner of Tacoma, both students in the College of Forestry. These awards are made for outstanding scholarship, character and leadership. These awards are made annually by the Tacoma Lumbermen's Club.

Master of ceremonies for the evening's entertainment was Eddie Alexander, Director of Personnel, State of Washington, and guest speaker was Dean S. Mansell of Macaulay, Nicolls, Maitland & Company, Ltd. of Vancouver, B. C.

The Tacoma Lumbermen's Club is the West's outstanding organization, having been started during the first war. In addition to holding a weekly luncheon, the club sponsors a Northwest Lumbermen's golf tournament which is the industry's most largely attended golf meet.

New Access Road Taps Idaho White Pine Area

Construction of an eight-mile access road from the Priest River-Coolin County Highway to the center of its newly acquired block of Idaho white pine is nearing completion, it has been announced by The Diamond Match Company. The stand of timber contains approximately 52 million board feet and was purchased by Diamond from the State of Idaho. The block is located 20 miles northeast of this community.

The road builders drove construction through a precipitous mountain region to reach what had been considered an inaccessible area. Three miles of the road was cut through rock while deep ravines required the construction of several bridges.

The road was designed for a fast, heavy-duty log haul. It is 20 feet wide and is ditched and backsloped. It is being ballasted with 12,000 yards of material. Grades are nominal, 10 per cent maximum with the load and 6 per cent maximum against the load in short stretches.

When completed the log haul to Diamond's Albeni Falls sawmill will average 30 miles.

Sawmill Industry

(Concluded from page 52)

conducted operations, gluing assumes more and more importance particularly since electronic equipment is being developed and adapted for commercial use in mills.

While the use of portable mills is not new great progress has been made by manufacturers of such equipment. These mills today produce well manufactured lumber. There is a distinct trend toward greater use of such units even by large firms which believe their use in the industry will steadily increase. Several authorities in this issue point to this trend and tell how they can be made to fit into the overall lumber manufacturing picture.

Among larger operations distinct progress has been made toward integration which spells closer utilization. Thus we see small mills being set up close to the timber supply, cutting small or defective logs which likely would not yield the cost of production if shipped to tidewater or to big mills where equipment often is not suitable for economically or efficiently producing lumber from such logs. We see a trend toward setting up of veneer plants close to the timber as a means of converting low grade logs into merchantable material needed by the plywood plants. We see more fuel conversion plants being installed in connection with sawmill operations. We see operators seeking means of converting sawdust, shavings, and chips into dollars.

The sawmill industry is on the move. It is no longer static.

The LUMBERMAN takes this opportunity of thanking the large number of sawmill men for their valuable contributions to this issue.

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SAFETY CONFERENCE

Oregon's first annual Governor's Industrial Safety Conference, held in Portland Nov. 30-Dec. 1, might well have been an international safety meeting if judged by the areas represented by the 572 registering delegates and program participants.

Dr. W. M. Kemp, active in British Columbia industrial safety, stressing first aid in logging said that each unit should have competent first aid personnel especially equipped and trained for immediate treatment of shock. Training for such includes administering blood plasma, oxygen, and morphine.

Chris Nyland, St. Helens Pulp & Paper Co., St. Helens, Ore., in the opening day's session told of his organization's program bringing about a correction of employe attitude to obtain cooperation in eliminating unsafe practices. R. H. Williams, of Willamette Iron & Steel Co., appearing on this same portion of the program discussed essentials of a job safety program analysis.

In the final day's session forest products industries were featured in whole or in part in three of five specialized sections carried on concurrently. Ted Kepner, Crown Zellerbach Corp., Portland, presided as chairman of the logging group. E. W. Morley, president of Western Logging Co., whose subject was "The Foreman's Job in Woods Safety," feels the foreman has extensive opportunity as concerns safety in woods operations and, conversely, a safety responsibility to both the employer and men working under him. Recognizing that safety programs are most effectively applied when management is first sold, it is also possible for the foreman to promote safety on the job to both his men and his employer. One essential of all good foremen is to have interest of their men in mind.

Planning of safety in a logging show received consideration of a panel composed of Kendall Wood, consulting logging engineer, L. N. Rees, logging superintendent, Crown Zellerbach Corp., Elmer Surdam, manager of National Forest Industries Communications, and chairmanned by E. T. Clark, Pacific Northwest Loggers Assn.

Rees singled out falling-bucking and yarding-loading as of prime consideration in planing the operation for safety, and reviewed piecemeal do's and don't's. However, he declared need for combined effort of every man in an organization to obtain a successful safety program, and placed emphasis on development of a "hazard attitude" among the employes.

Ken Wood, recognizing responsibility of the logging engineer for planning the operation, said many woods accidents may indirectly be due to improper engineering work, especially as concerns laying out of roads and logging long corners.

Elmer Surdam, discussing the planning of communications for safety, told the group that the importance of radio communication in protection of life and property was of primary concern in making channels available by F.C.C. to forest products industries. Points stressed for industrial woods operations radio include the following: 1. The radio system should be in service "around the clock"; 2. Besides 1 or 2 base stations, there should be mobile stations in the operating area; 3. Communications from headquarters to superintendent are a must; 4. Communications from camp or side to mobile units, and between logging sides, enables correlation of emergency activities; 5. Radio for fire protection is essential; 6. The more radios and telephones the better.

James R. Grady, code writer for the State Industrial Accident Commission, told the logging section attendants that a new logging code is now being formulated, a tentative draft of which can be expected by February 1950, and will subsequently be considered at a series of meetings.

A sawmill and woodworking session featured talk and discussion of safe sawmill design by Robert M. Evenden, director of accident prevention division, State Industrial Accident Commission. He brought out importance of safety considerations in designing and building a new sawmill. Evenden declared need for an economical, safe arrangement for unloading logs from trucks.

A panel headed by Robert P. Miller, Long-Bell Lumber Co., treated on "Use of Personal Protective Equipment in the Mill."

L. N. Rees, logging superintendent, Crown Zellerbach Corp., takes up the various factors in "Planning the (woods) Operations for Safety" at the Governor's First Annual Industrial Safety Conference in Portland, Ore.

Weyerhaeuser Preparing Millsite at North Bend, Oregon

Work is progressing on Weyerhaeuser Timber Company's 40-acre plant site at North Bend, Oregon. During November about 50 men were constructing approximately 1900 feet of bulkhead to protect the plant site from the bay area. An 800′ shipping dock will be built along the northern end of this bulkhead. The log pond is at the south end of the millsite.

About 2700 pieces of pressure-treated creosoted piling and 50,000 lineal feet of creosoted fabricated timbers and lumber will be used on the project. Approximately 900 feet of bulkhead will be built along the inner edge of the log pond, which is an indentation from the bay waters.

In charge of local construction is O. D. McCarty. Overall supervision is by John Gischel, from company offices in Springfield, Oregon. Gischel was in charge of the Springfield sawmill construction.

It is expected that initial harvesting of logs in the Millicoma Forest will begin early in 1950. Wood headquarters is at Allegany, on the east fork of the Willicoma river, about 15 miles northeast of Coos Bay. The private logging road ends here.

Obtains Peeler Log Supply

A recent contract entered into between the Union Lumber Company, Fort Bragg, California and the Coast Plywood Manufacturing Company at Calpella, California, calls for monthly shipments of 600,000 feet of select fir peeler logs. These logs are being selected at the mill pond at Fort Bragg and are loaded into gondola cars and subsequently shipped by the California Western Railroad, a subsidiary of the Union Lumber Company to the Coast Plywood Manufacturing Company.

John D. Riley is in charge of the selection, grading and scaling of this operation. Mr. Riley was formerly with the Rockport Redwood Company as Salvage, Re-log and Peeler Log Foreman. He is a member of the Society of American Foresters and President of Forest Products Industries, a Mendocino County organization.

Peeler Log Study

E. W. Fobes, of the Forest Products Laboratory, Madison, Wis., has been in the Northwest heading a study aimed at developing data which will assist in determining, by visual inspection in the round, whether or not a certain log is suitable for peeling. An effort will be made to set up rules for predetermining the interior character of a log or tree based upon readily visible external indicators.

Modernization Picture

(Concluded from page 62)

That is the secret of the whole revival of the wood-using industries in the Northeast: instead of watching their markets fade they have decided to compete under changing conditions. It is reflected in ways other than in mill improvements. The Northeast gives ground to nobody these days in the amount and variety of its wood research. Always the site of good forestry schools, these have expanded into phases of manufacture and are augmented by such separate organizations as the Northeast Wood Utilization Council. Syracuse University is doing notable research for groups of mills, and the University of Maine, in addition to its traditional forestry school, has a department of industrial development devoted to Maine wood-using industries. The Northeast, too, has come to realize that it will continue to have an adequate timber supply with a practice of good forestry. Like the Midwest before it, this area knows now that the prophets of doom were wrong about the timber. They realize, too, that there are markets and uses yet to come. A Northeast mill owner no longer feels that he is simply running out to the bitter end of his sales or his equipment.

This is not to say that the Northeast has been more backward in this industry than other regions. The contrary is true: it was the first to be forward-looking, the very cradle of lumber manufacturing as we now know it. Equipment people who serve the Northeast will tell you that the lumber idustry is now coming full circle and is truly national, whereas it was formerly conceived as moving slowly from one timber region to the next.

So as the Northeast mills study the newest in equipment for modernization it could very well happen that the basic transformation in equipment, which Mr. Duffey mentioned, machines which introduce a new method or process, will take place here by a joining of sawmill engineer, equipment man, and mill manager. After all, in New England occurred the first improvements.

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Latest News and Developments in the Machinery and Equipment Field

New Philippine Island Sawmill in Operation

The Dahican Lumber Company has just recently started operation of their mill located in timber near Dahican, Philippine Islands. The mill is expected to produce 30 million feet per year.

The mill machinery furnished by The Peters Company of Portland, Oregon, is entirely of bolted steel construction so that it can be moved when necessary.

The log deck is equipped with an air operated stop and loader and hydraulic hook turner. The three block steel rack and pinion carriage includes a Peters' hydraulic automatic set works and hydraulically powered dogs. This provides one man operation.

A circular headrig swinging two sixty-inch saws cuts cants for the pony rig equipped with a 54" Allis Chalmers band mill. Transfer chains from headrig to pony carriage are equipped with a hydraulically operated lift to permit the stacking up of cants on the pony carriage. Both the main and pony carriages are powered by hydraulic feed works which gives good fast action and easy control.

Transfer chains are provided for moving lumber from both the main rolls and pony rolls to a 6 x 48 Peters hydraulic edger.

Power for this mill is a combination of Diesel generated electric power and Diesel power. The headrig has a 200 h.p. electric motor direct connected to the lower arbor, the pony band mill is driven by vee belt drive from a 100 h.p. Diesel, and the edger by a 100 h.p. direct connected electric motor. All hydraulic units, roll casings and transfer chains are driven by individual electric motors so that no line shaft or long belt drives are used.

Trim saws, gathering chains, green chain and conveyors were designed and installed by Dahican engineers.

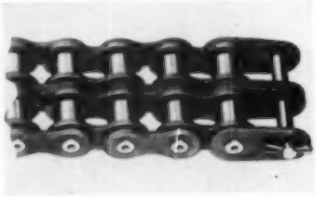
Logging for this mill is done by a combination of steam donkeys and tractors with arches.

New Roller Chain Development

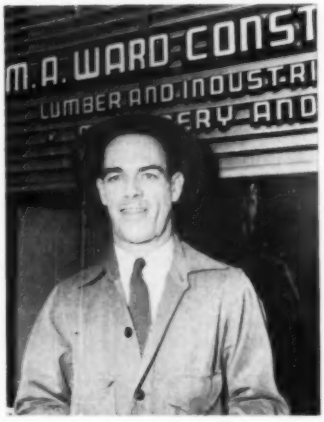
Baldwin-Duckworth Division of Chain Belt Company announces a revolutionary development in roller chain construction known as the Baldwin-Rex "BA" Assembly! It is designed to simplify disassembly and assembly of roller chain in the field, on the job.

The new Baldwin "BA" Assembly consists of a 5 foot basic length of standard riveted roller chain with a revolutionary new single pin connector assembled at approximately the 2 foot mark and at the end of the basic 5 foot length. The connecting link employs one detachable pin and one rivet. It is necessary to remove only one pin to disconnect the chain. There are no other loose parts, since the plates making up the connecting link all are securely press fitted to the remaining rivet. The new single pin connector has a distinctive tear-drop shape for easy identification.

The new "BA" Assembly is available for all standard roller chains from one inch pitch to larger sizes in both single and multiple.

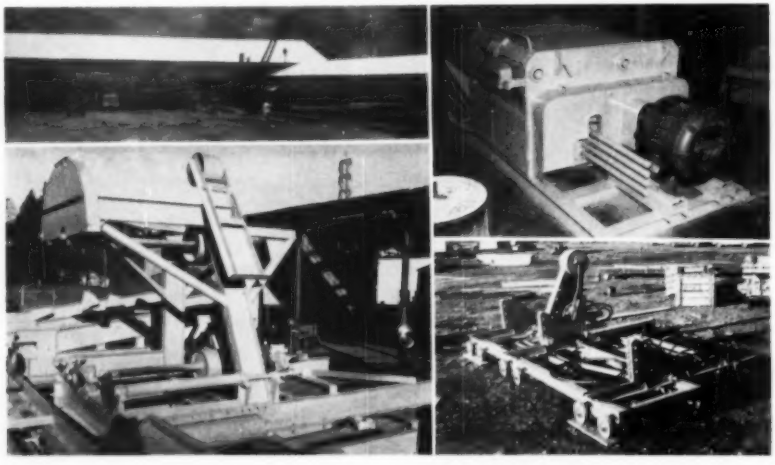


New Baldwin-Rex "BA" riveted Roller Chain assembly just announced by Chain Belt Co.



JOSEPH L. RILEY

has recently become associated with the M. A. Ward Construction Company of Eugene, Oregon, designers and builders of lumber plants and machinery dealers. Mr. Riley is well known in Oregon, Washington and California. It is the desire of Mr. Ward to develop service to the lumber industry which would be equal to that of other industries. This includes information regarding sawmill problems as well as an adequate service staff to properly handle major mechanical repairs or new installations. The duties of Mr. Riley will be the field coverage and coordination of efforts and work already done along this line.



Upper left: View of the new Dahican Lumber Co.'s sawmill in the Philippines; upper right: the Peters' edger; lower left: the Peters' headrig, and lower right, the Peters' carriage.

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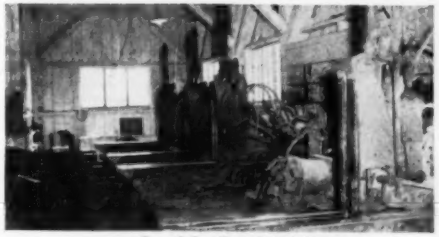

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This machine is equipped with ball bearings on all essential moving parts and is designed for a long life of accurate grinding with a minimum of upkeep. Furnished complete with motors, filing clamp and saw stands.

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Price F.O.B. Portland, Oregon

Automatic Bandsaw Grinders—Welding Clamps

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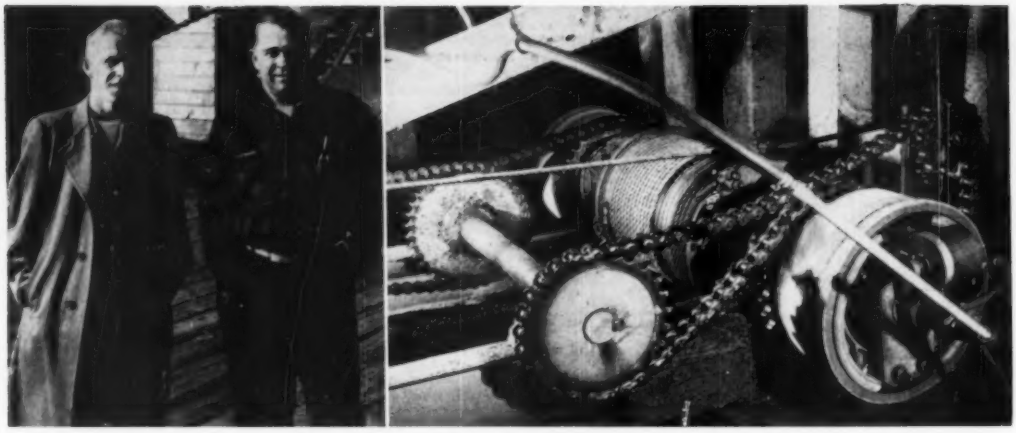


The feed works here illustrated (right) was manufactured by the Salem Equipment Co., Salem, Ore., and installed in the Capitol Lumber Co.'s mill at Salem. The unit is powered from a jackshaft driven from the saw arbor. The company saws up to 70M per shift. It has installed a 30 ft. four headblock carriage and a "Salem" air operated Brake Drum Feedworks. The men are Jack Strickfaden (left), who with his father, Chas. Strickfaden, manage the Capitol Lumber Company. The other man is Vic Utterback, designer of the machine and manager of Salem Equipment Co. Mr. Strickfaden states that "the Salem Feedworks handles the heavy carriage faster, smoother, and with no maintenance trouble." They replaced a 50 h.p. electric feed with the Salem brake drum feed.

Two Trakloaders Delivered

Atlas Logging Co., Glenwood, Oregon, just took delivery of a new Washington Trakloader from Fred E. Barnett Co., Portland, Oregon. This machine was on display at the Washington Iron Works plant during the Pacific Logging Congress and delivered to Atlas directly afterward. George Van Vleet of Elsie, Oregon, also took delivery of a Washington Trakloader.

Takes Delivery of New Monarch Carriage

Western Forest Industries Ltd., Honeymoon Bay, B.C. recently took delivery of a new Monarch Forge & Machine Works air operated 72" 4-block one-man carriage. They also purchased a new 72" Western hydraulic and air resaw from Monarch Forge and Machine Works, who are now the manufacturers.

Since taking over the Western resaw, Monarch Forge has added a number of improvements and refinements with the combination of air. They have also added an electric hydraulic set works for the resaw which makes for easy operation.

J. G. Stothers, plant manager for Western Forest Industries Ltd. decided on the Monarch line after looking over the field.

The *Tall Tree Lumber Co.*, Lebanon, Ore., has filed for articles of incorporation.

New packaging system for Atkins Crosscut Saws. Saws are packed individually and 5 crosscut saws or 6 one man saws to a container. Each container is strongly reinforced with steel strapping. Packages of two-man saws will be reinforced in four places with steel strapping, packages of one man saws with three steel straps. Description of contents of each package will be stamped on sides and both ends of the container.

Skagit Develops a New Cable Reel

Designed to provide an efficient, economical method of moving and storing cable of any size, a newly-developed Skagit Cable Reel has just been introduced to the logging industry by Skagit Steel & Iron Works, Sedro Woolley, Wash.

The new equipment is built with a large-capacity cable spool which is removable and interchangeable with extra spools. The standard model is equipped with a Skagit-developed, self-reversing, level winding fairlead, which is adjustable for any size cable. The spool holds approximately 2100 feet of two-inch line.

To make the unit mobile, the frame of the Cable Reel hoist is built for mounting directly on a standard truck frame.

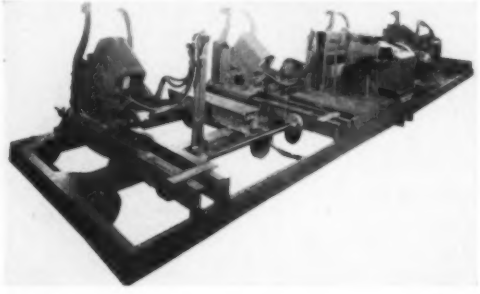
In introducing the Cable Reel, Skagit Steel & Iron Works said it provides the logging operator an efficient means of employing money-saving practices by speeding up the moving of cable from setting to setting as well as eliminating costly damage resulting from kinking, raveling and corrosion caused by inefficient handling and neglect.

G-E's New Motor

Development of a stream-lined general-purpose electric motor, one with improved operating characteristics although about 20 per cent lighter in weight and size over previous models, has been announced by the General Electric Company, at San Jose, Calif., where the new unit was designed and engineered. The integral horsepower motor, widely used for air compressors, commercial refrigeration, air conditioning and other equipment wherever power supply demands single-phase operation, is available in two types with ratings from ½ to 5 horsepower, according to Carl J. Andersen, plant manager.

Expands

General Motors Acceptance Corp. has expanded its offices in the Terminal Sales Building, Portland, considerably to take care of their growing business.



72" Air-electric "Monarch" carriage delivered to Western Forestries Ltd., Honeymoon Bay, B.C.

TRY!

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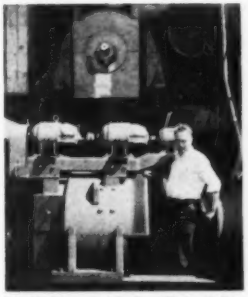

250 HP Skeen electric Feed Works at Cascade Locks Lumber Co., Cascade Locks, Oregon.

Investigate the Skeen Electric Works Electric Carriage Feed Drive

The electric carriage feed drive designed and custom built by the Skeen Electric Works will answer your problem on a strictly competitive basis with conventional feeds.

The electric feed drive is a reversing variable speed unit, so designed to meet the most critical speed requirements that can be encountered in driving equipment for sawmill carriages.

The entire unit consists of one motor generator set, plus the driving motor and the operator's control, both units being forced draft cooled against any possible heating due to high ambient temperatures and extreme operating conditions.

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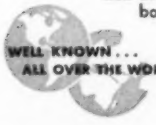


830-ton, 10-opening Hot Plate Press with plates 102 x 65 in. Automatic temperature, timing and pressure controls. Welded steel frame.

MAKERS OF PRECISION MACHINERY FOR NEARLY 100 YEARS

Left to right, George Bukowsky, E. A. Trask, Art Robinson.

Liquidating Logging Camps

Announcement is made by Olympia Supply Co., Springfield, and Roseburg, Oregon, of their liquidating the logging camp equipment of both Wheeler-Osgood Corp. of their Crown and Beaver logging divisions at Disston, Oregon. Also, they are liquidating the logging camp equipment at Rock Island Lumber Co., Sutherlin, Oregon. . . .

Equipment comprises everything used in a modern logging camp from yarders to trucks, etc. . . . complete lists of such equipment are available at either the Roseburg or Springfield addresses, according to Abe Bean, manager of the firm.

The Olympia Supply Co. has also acquired the Donna Lumber Co. mill at Azalea, Oregon, which is practically brand new, and are offering it for sale in separate items or as a complete unit. It is a double circular head rig with all accessory equipment, planers, etc. Abe Bean of the Olympia Supply Co. is following in the foot steps of his father, Earl Bean, in the liquidation of sawmills, logging equipment, etc.

Longview Fibre Co., Longview, Wash., has purchased 25,000 acres of cutover tree farm land in Marion county, Oregon, along Bridge Creek road, formerly logged for lumber by *Silver Falls Timber Co.*, Silverton, Ore.

Roebling Builds Strong Distributor Organization

E. C. Low, Trenton, N. J., vice-president and general sales manager of the John A. Roebling's Sons Company, was recently in San Francisco conferring with George Bukowsky, formerly manager of the company's Portland branch but who has recently been made manager of the San Francisco branch. Mr. Low also conferred with a number of the company's distributors. The company has in recent years greatly extended its distributor organization throughout the west and it was the fact that these distributors, strategically located to serve the entire area, are now carrying heavy stocks of Roebling wire rope, that made it possible for the company to close its Portland branch. Except for the two distributors in Klamath Falls and North Bend, Ore., which will be under the direction of the San Francisco branch, the Northwest Roebling distributors will be under the direction of the Seattle branch of which Art Robinson is manager.

This strong distributor set-up, the company is confident, will insure customers the same capable service that they have received in the past.

Following is a list of Roebling wire rope distributors in the Northwest:

Bellingham . . . Morse Hardware Co.; Seattle . . . Star Machinery Co. and Seattle Hardware Co.; Aberdeen . . . Whitcher Machinery Co.; Portland, Eugene and Roseburg, Ore. . . . Western Equipment Co.; Medford and Klamath Falls, Oregon . . . Lorenz Co.; Spokane and Boise . . . Intermountain Equipment Co.; Missoula and Kalispel . . . Mountain Tractor Co.; Great Falls and Butte . . . Montana Hardware Co.; Astoria . . . Fisher Brothers; Wenatchee Industrial Steel & Supply Co., North Bend, Ore. . . . Wells & Wade.

E. A. Trask, who has been the San Francisco manager, has been transferred to Chicago to become sales manager of the John A. Roebling's Sons Company of Illinois, under Everett Weart, president of that company.

Art of Selling Must Be Preserved Says Truck Executive

At a recent banquet where he was honored guest speaker, Robert F. Black, President of The White Motor Company, told 400 Southern California executives that there is need today for enthusiastic leadership in industry to preserve the art of selling and the science of management.

"After six years of abnormally rich markets since the war, history is repeating itself," he declared. "In every business that we know anything about, the need for deeper penetration of its natural markets is reasserting itself. Fortunately, the potential business just under the surface is tremendous."

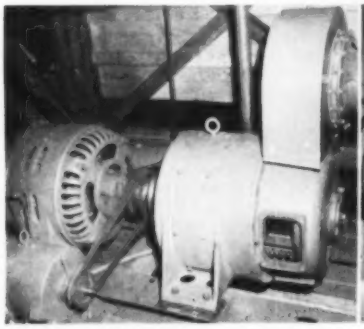
Mr. Black, one of the pioneer automotive manufacturers of this nation, concluded that in the immediate future there is an astounding amount of business to be had, with more customers than ever before in all history with money to spend.

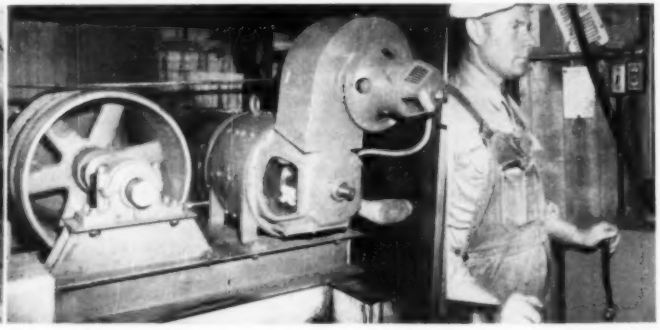
Mr. Black spoke at the Fifth Annual Executives Banquet at the Huntington Hotel in Pasadena. Included in the gathering were Wilson D. Patterson, White's Pacific Coast Regional Manager; Richard W. Cochran, Manager of the Los Angeles Branch, and members of White's sales personnel for Los Angeles.

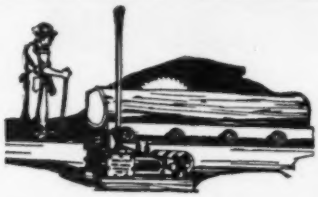
Appointed Fawick Distributors In Portland Area

Western Machinery Corp. has been appointed distributor for Fawick air clutches in the Portland distributing area. Ken Hall, president of Western Machinery Corp., feels they have an additional fine service for lumber manufacturers.

Components of the new Skeen electric carriage feed works at Cascade Locks Lumber Co. sawmill, Cascade Locks, Oregon. Left, Skeen generating unit, alternating-current motor driving direct-current generator for powering motor unit controlling carriage travel. Center, Skeen motor power unit driving through chain sprocket to drum with wire rope, each end of which is attached to carriage. Right, Ray Jackman, plant superintendent, at head sawyer station. Feed works control lever in left hand activates the 9-speed Skeen feed works—4 speeds ahead and 5 reverse. In his right hand is jackey stick Peters air hook and hydraulic turner. Company officials say that since installing the electric feed works, they have had a substantial increase in production, as well as eased handling of control.







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STEAM FEED

helps the small and medium size sawmill to make a profit through

GREATER PRODUCTION
without increased expense.

Uses no more steam than belt or friction feeds. Less expensive to operate. Much faster. Full details in Catalog W. Yours for the asking.

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STEAM FEED WORKS
MERIDIAN
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Speed Up Production . . Cut Costs
with The GUNDERSON RESAW

- RUGGED
- VERSATILE
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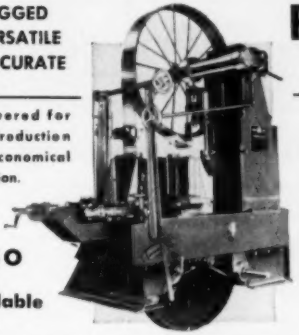

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Capacity 50M feet or more per 8-hour shift in average mill.

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Table tilts to 10 degrees for bevel sawing.

ALSO Now Available with

PRESSURE BAR FEED TABLE

A new, all steel table, complete with chain-powered feed rollers. Steel pressure bar in full contact with cants for accurate cutting. The operation of a single lever gives instant setting for any cut from 1" to 15". Eliminates tilt table and quadrant set works. Increases production 50% to 100%.

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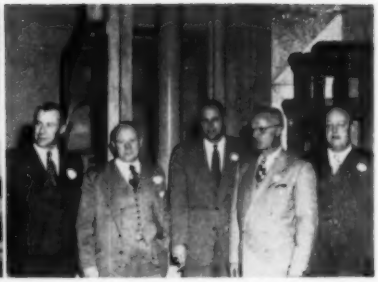
Alberni Plywoods, Ltd. (plywood)
Victoria Lumber Co. Ltd. (lumber)

Managing Operators for:
British Columbia Forest Products, Ltd. (lumber)



Left: New home of the San Francisco industrial truck retail sales and service store of the Hyster Co. at 4445 Third St. Right: Among the Hyster Co. officials attending the open house celebrating the inauguration of the new San Francisco industrial truck retail sales and service store, were L to R—R. L. Golden, manager of the San Francisco store; Ernest Swigert, president; Philip Hill, general sales manager; Ray Ronald, western division sales manager; and Dar Johnson, sales promotion manager.

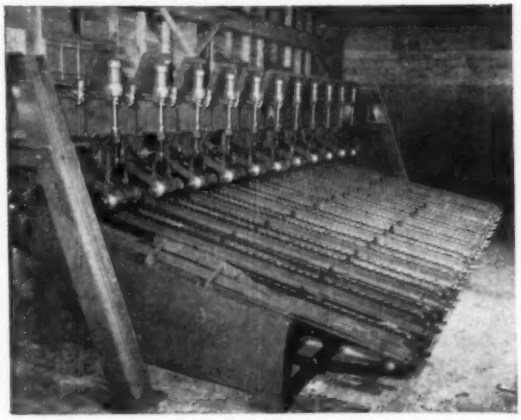
Hyster's New San Francisco Plant

Among the notables attending the open house of the new industrial truck retail sales and service building of the Hyster Co., 4445 Third st., San Francisco, last month were: Ernest Swigert, president of the company; Philip Hill, general sales manager; Ray Ronald, western division sales manager; and Dar Johnson, sales promotion manager.

The new store, covering 10,000 sq. ft., is considered one of the most modern materials handling distributorships in the United States.

On display for the several hundred visitors who toured the new show room, offices, parts, and service departments, were seven different models of industrial trucks and a number of special-purpose attachments manufactured by the Hyster Co. at its factories in Portland, Ore.; Danville, and Peoria, Ill.

R. L. Golden is manager of the San Francisco store, whose staff of 18 persons handles industrial truck sales and service in 43 counties of northern California, and 11 counties in western Nevada.



New model Albany 6"x20' 11-saw air lift trimmer recently installed by M & M Woodworking Co., in their Kenton, Ore., mill. It is of all steel construction with anti-friction bearings, and has electric solenoid operated control valves. Note the long table to facilitate accurate grading and trimming.

New Smooth-End Trimmer

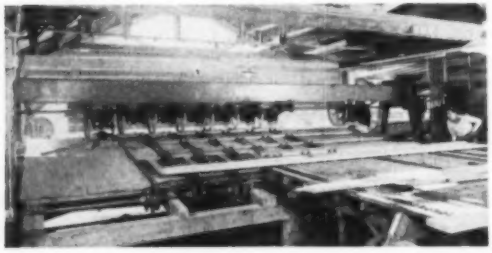
The Air-King Manufacturing Corp. of Tigard, Oregon, has recently installed a new IRVINGTON No. 43-C Automatic-Selective Random Length Smooth-End Trimmer in their modern remanufacturing plant.

This trimmer is installed directly off the green chain at Air-King; the lumber, after passing through it, drops onto a conveyor belt from where it is deposited onto the sorting table; here it is graded and sorted by dimension and length. From the sorting shed the lumber is transported to the planer building where it is surfaced, then taken directly to the loading dock.

Van S. Camp, president of the Air-King Manufacturing Corp. states that, "Today, Smooth-End trimming of lumber has become a necessity."

The Air-King Manufacturing Corp. has an efficient flow of over 100 thousand board feet of lumber through their modern mill every 8 hour shift. With Mr. Camp in the operation of the company is Ted Holmes, Secretary-Treasurer.

This new trimmer, recently developed by the Irvington Machine Works of Portland, Oregon was designed and engineered with the idea of constructing a trimmer that would be in a price range to meet the pocketbook of the small and medium sized lumber mill owner. Aluminum alloy frames hung directly from the drive shaft, larger riding wheels, smaller saws (18"), and elimination of all frills are just a few of the features that have contributed to the lower price of this unit.



Front view of the IRVINGTON No. 43-C Automatic-Selective Random Length Trimmer at the Air-King Manufacturing Corp., Tigard, Ore. Note selective pull cords enabling the operator to selectively trim at the same time that the unit automatically smooth-end trims the ends.

New Caterpiilar Dealer at Klamath Falls, Medford, Ore.

B. L. Hagglund, Western Division Sales Manager of Caterpillar Tractor Co., San Leandro, California, has just announced Crater Lake Machinery Co. as the new Caterpillar Dealership replacing Reed Tractor & Equipment Co., which has served Klamath, Lake, Jackson, Josephine, Crook and Deschutes Counties in Oregon and Modoc and Siskiyou Counties in California since 1936.

The new firm is headed by Stanley Miller, President, G. C. Lorenz, Vice President, Reuben Larsen, Secretary and Sales Manager.

Messrs. Miller and Lorenz are longtime residents of Klamath Falls and are well known in the area. Mr. Larsen has been in Klamath Falls since April and brings with him many years of experience in the construction, logging and agricultural machinery field.

In Logging Supply Business

W. E. (Bud) Lacey, who for the past five years as a salesman for a Portland logging equipment house, and for six years prior to that with Pope & Talbot Co. in various capacities, is now in the logging supply business for himself. He is a veteran of World War II. Lines handled by him are Macwhyte Wire Rope, Disston Power Saws and Coos King yarders and loaders. His office address is 2844 N.E. 38th St., Portland, Oregon.

International's New Trucks

A new line of completely re-designed and re-engineered International trucks is being introduced throughout the United States, it was announced by W. C. Schumacker, General Manager for the Motor Truck Division of International Harvester Company.

Trucks of the new L-line, a complete line consisting of 87 basic truck chassis models designed to handle any type of hauling job, went on display in dealers' Company Branch showrooms throughout the nation, Mr. Schumacker said.

The heavy-duty engineered L-line, Mr. Schumacker said, presents a completely new design in motor trucks, at once apparent from the massive front end to the smartly styled cab. In addition, many new mechanical and engineering improvements, designed to promote operating efficiency and economy, have been incorporated in the new line.

The new L-line is spearheaded by four classifications of four-wheel model trucks, ranging in gross vehicle weight from 4200 pounds to 30,000 pounds.

The company's "West Coast" trucks, manufactured in the Emeryville, Calif., International Harvester plant, include two highway and four off-highway vehicles, ranging in gross vehicle weight from 30,000 to 90,000 pounds.

Scores of body sizes and styles are offered in the new line.

Dimensions of the chassis of the new L-line have been engineered to provide better load distribution, greater maneuverability, shorter overall lengths and improved engine accessibility. Biggest change in chassis dimensions is in the wheelbases, which have been shortened as much as seven inches in some models.

The shorter wheelbases, together with reproportioned cab-to-rear axle dimensions and front-axle-to-cab dimensions, have resulted in a shifting of load weight, so that it is in balance between front and rear axles.

The L-line offers a complete selection of transmission to meet every hauling requirement. Main transmission available include two sizes of three-speed Syncro-shift; a four-speed sliding gear; a new four-speed Syncro-shift; four sizes of heavy duty, five-speed constant mesh, with direct or overdrive in fifth; and five-speed Syncro-shift, with direct or overdrive in fifth. A number of auxiliary transmission also are available.

Wider, sturdier rear axles, engineered to handle any job, are available in the new models. Hypoid axles are introduced in the L-line.

Modern Blower System

Two high efficiency blower systems have been designed and fabricated and installed in the new Elmer & Moody Company Plant, in Seattle, Wash., by The Anderson Blowpipe & Mfg. Co., Inc., Seattle.

On one system nineteen wood-working machines, including planers, panel saws, shapers, table saws, sanders and jointers, were piped. The second system has thirty-four machines, including stickers, surfacers, chop saws, band saws and others mentioned above. The hoods for these machines were all designed by the Anderson Blowpipe & Mfg. Co., Inc., in accordance with the type of dust that was to be handled, so that the greatest possible amount of efficiency could be obtained.

Each system is serviced by its own fan, namely one Anderson #70 and one Anderson #50.

Two of the very latest Anderson special low resistant design collectors were also installed, as was the discharge pipes, suction lines, small branch lines, slip joints and all other necessary piping. Automatic weather roofs were also installed on the two collectors.

In Modern Quarters

Goldstein & Bloch, sawmill and logging equipment firm in the 1100 block of East Wishkah street, Aberdeen, Wash., has completed a remodeling program that included construction of a 40 by 50-foot display room at the company's warehouse.

The equipment firm, organized as Goldstein & Rogers in 1938, is one of the largest industrial salvage and heavy equipment firms in the Harbor area.

The firm was formed as a partnership by the late Ben Goldstein and William B. Rogers. Harry Goldstein, manager of the company, was associated with his father in the business.

The firm became a partnership of the Goldstein and Bloch families about two years ago. The Blochs—Morris, L. D., and George—operate a similar company at Seattle. Harry Goldstein is the active member in the Aberdeen firm.

Goldstein & Bloch represents several major firms in the Harbor area, including U. S. Motors, E. H. Edwards Company, Moline Malleable Iron Co., Allen Bradley, electrical control manufacturers, and the Seal-Master Bearing company.

The Silent Watchman

Dixie Tank and Bridge Co.

3523 LAMAR AVE.—P. O. BOX 14 MEMPHIS 1, TENNESSEE

COMPLETE SERVICE FOR ELEVATED WATER TANKS

NATION WIDE SERVICE — 30 YEARS EXPERIENCE

KEEP THE SAFETY FACTOR IN YOUR TANK THE DIXIE WAY

By welding seams, pits and rivets which gives a riveted tank 15% more Safety Factor than it had when built. No rivets removed, water supply maintained while work is in progress. On completely re-conditioned jobs, the painting is guaranteed for five years, repairs guaranteed for ten years, provided the tank is painted every five years. Yearly inspection, making all adjustments, if any, without additional cost.

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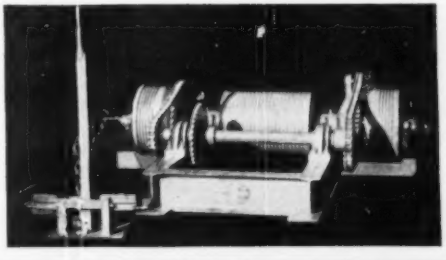
THE LARGEST ORGANIZATION OF ITS KIND GIVING SAFE MAINTENANCE AT LOW COST

Eliminate Breakdown Problems From Feed Works



By Use of Latest Modern Designed Air or Hydraulically Operated Brake Drum Feed Works (Handles up to 100 H.P.)

ONE OPERATOR, handling an 8-ton carriage cutting up to 6-foot logs, states: "They have excess power and braking capacity." Name given upon request.

Standard Heavy Duty Logging—Trailer Brake Drums and Brakes used, actuated by Hydraulic Cylinders. A COMPLETE MANUFACTURED UNIT, FOR EASY INSTALLATION, AND RUGGED OPERATION. IDEAL IN PRICE AND OPERATION FOR MILLS FROM 25-75,000 CAPACITY.

WRITE FOR DETAILS

Salem Equipment Co.

Earl Hitchman Victor Utterback

Telephones: 3-5561 Day 2-4594 Night 3455 D St., Salem, Ore.

DUTCH OVEN RE-DESIGN SAVES $60,000 PER YEAR

By
M. F. ANDERS
Mechanical Engineer of F. E. Balden Co., Portland, Ore.

The Diamond Match Co. of Stirling City, Calif. has, under the direction of their Supervising Engineer, David R. Gray of Spokane, Wash., and their local manager, E. B. Mason, effected large savings by the elimination of fuel oil, fired as an auxiliary to hogged fuel. The savings brought about by a redesign of existing dutch ovens, will, when the program is completed, amount, it is estimated, to approximately $60,000 per year. The burning of fuel oil will be eliminated, and it is anticipated that one boiler will be retired from service to be used for standby or alternate service.

The savings are made possible by the replacement of conventional dutch ovens with the producer gas type ovens originally designed and pioneered by the F. E. Balden Co., mechanical engineers and contractors, Portland, Ore.

The original installation in the Chico, Calif. plant consisted of five low set, four drum, bent tube boilers, with ordinary dutch oven settings. It was found, subsequent to the original installation, that these boilers were incapable of generating sufficient steam to meet plant demands with the hogged fuel and sawdust available. Auxiliary oil firing was then reverted to.

In 1944 the F. E. Balden Co. was called into consultation regarding the re-design of the furnaces and dutch ovens with a view to eliminating the burning of fuel oil, which had reached a maximum of $60,000.00 per year.

Boiler settings No. 1 and No. 2 were re-designed. Producer gas type furnaces were installed with Carling steam turbine forced draft blowers supplying first and secondary air. The design was based on hogged fuel containing 40 to 50 percent moisture.

The first year operation of these furnaces proved them to be successful and the steaming capacity of the converted units greatly increased.

However, a year later the logging operations of Diamond Match Co. were shifted to a new locality. Immediately thereafter the newly installed dutch ovens proved incapable of handling the load, and investigation showed that the moisture content of the new hogged fuel was much higher than that for which the original producer gas type dutch ovens had been designed. The moisture content of the new fuel was 68% whereas the furnaces had been designed for a maximum of 50% moisture.

The F. E. Balden Co. re-designed the furnaces to meet the new conditions, and satisfactory operation resulted. In 1947 No. 3 boiler was changed to the new design and at the present time No. 4 boiler is being converted.

It is anticipated that the fifth boiler will be discontinued from service and supplementary oil firing discontinued.

The accompanying drawing shows the principles of design of a producer gas type dutch oven.

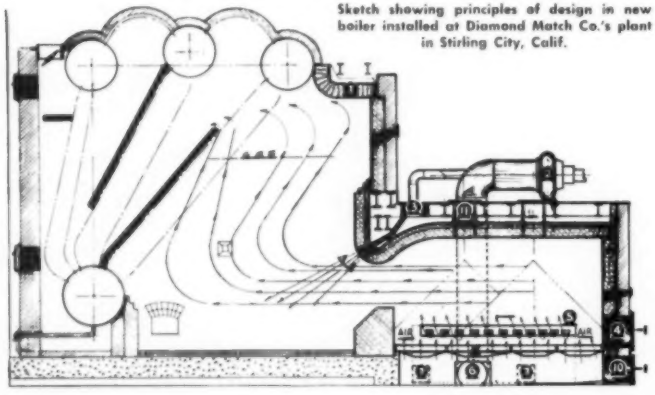
No. 1 is a Detrick suspended flat arch, the purpose of which is to supply a roof to allow the front wall to be set away from the top front steam drum thereby creating greater furnace volume. Greater furnace volume provides a greater furnace cross sectional area which in turn provides a lower velocity of gas travel. A slower velocity provides increased time not only for the mixing of air with combustible gases but also more time for heat transmission through boiler tubes, a higher furnace temperature again resulting in higher heat transfer from hot gas, through tubes and, therefore, more steam.

No. 2, a Carling steam turbine driven forced draft blower supplying a positive supply of air to the under grate area, through the side and center wall tuyere blocks, No. 5; and also to the combustion chamber, No. 3. The supply of air under positive pressure and automatic control assures a carburated condition of air and gas which promotes complete combustion of the wood refuse. This air enters the hot fuel bed through water cooled grates, No. 8, and through side and center wall water cooled tuyere blocks, No. 5, assuring a supply of combustion air to all parts of the fuel bed.

In addition, secondary air is injected into the gas stream directly above the Detrick drop nose arch, No. 3, where any unburned portions of producer gas are ignited.

No. 4 is a duct conveying air from the forced draft blower to the under grate area, No. 7, to the side and center wall tuyere blocks and the over fire air inlet. No. 6 is the inlet to the ash pit area. No. 7 are the inlets from the ash pit to the side and center wall ducts leading to the water cooled tuyere blocks. No. 9 are gas tight above grate clean out doors. No. 10 are gas tight ash pit clean outs. No. 11 are four 15" x 15" cast iron feed inlet castings.

The arrows indicate the direction of the flow of burned gases, unburned gases and air supply.



Sketch showing principles of design in new boiler installed at Diamond Match Co.'s plant in Stirling City, Calif.

Chemical Controls Weeds By Soil Sterilization

Here is another instance of a modern chemical doing a job easier, quicker and better than the old-time, hand methods. This chemical, arsenic trioxide, kills weeds and also sterilizes the soil so no plant growth occurs for a year or two.

Applying Arsenic trioxide to kill weeds.

Arsenic trioxide can be used around lumberyards, warehouses, buildings, and industrial yards; around tanks containing inflammable materials; along fire breaks, fence lines and rights-of-way. It can also be used to clear off weeds and prevent regrowth on dirt and gravel roads, paths, trails, parade grounds, driveways and similar places.

Arsenic trioxide is highly toxic to vegetation and when applied to the soil in the proper dosage, retains weed-killing power for a long time. It can be applied at any time of the year but the best weed control is obtained when it is applied at the start of the rainy season when weeds and grasses are starting. An application at this time kills the young weeds and the weed seeds not yet germinated and also sterilizes the soil. Then, "spot" treatments can be made seasonally or annually to prolong weed control indefinitely.

For application, low pressure (100 to 150 lbs.) power equipment is recommended, although sprinkling carts may be used or, for small areas, a sprinkling can may be used.

When using this arsenical weed killer—as it sterilizes the soil, it should not be applied within the "drip" areas and root-feeding areas of trees, shrubs, vines and other valuable plants. TRIOX should not be applied where there is any danger of animals eating weeds that have been sprayed as it is an arsenical poison.

New Atkins AC Curled Chip Chain

By the introduction of the new Atkins heavy duty AC type Curled Chip chain as standard equipment on all models of their L-M Pond and Deck Saws, the distributors of the L-M Equipment Co., Portland, Ore., say they have substantially increased the cutting speed and efficiency of these units. This new chain is designed and constructed for water service. However it performs equally as well on dry cutting or on portable saw operations.

In a recent test conducted on a seven foot pond saw of the Diamond Lumber Company at Glenwood, Oregon, the chain made 70 cuts before resharpening was necessary. This cutting was done on seasoned logs varying from three and one-half feet to five and one-half feet in diameter.

The teeth of the chain are heavy gauge, single router type and incorporate the hardened steel roller bushing feature used in previous Atkins chains. One of the most important advantages is the added kerf width which provides adequate bar clearance for cutting large diameter logs in water.

The ACR type chain is a modification of the AC chain and designed for fast accurate ripping logs of any size diameter.

Modernized

Morrison & Jackson remanufacturing plant, Meyers Flat, Calif., has been modernized with the addition of a 54" resaw, manufactured by the Sotoyome Machine & Implement Co., Healdsburg, Calif.

Sotoyome log turners manufactured by Sotoyome Machine & Implement Co., Healdsburg, have been installed at the C. T. Lindsay Lumber Co., Stewarts Point, and Nash Logging Co., Philo, Calif.

Earl W. Pughe Joins Wheland

Earl W. Pughe has joined The Wheland Company, Chattanooga, Tennessee, as manager, manufacturing division. This division includes the design and production of Wheland sawmill machinery.

Mr. Pughe has more than thirty years experience as a production executive. He was with Chevrolet Division of General Motors for 22 years. During that time his duties included management of three Chevrolet plants. Immediately prior to his connection with Wheland, Mr. Pughe had been assistant to the President, Dana Corporation, Toledo, Ohio.

A native of Utica, New York, a graduate of Rensselaer Polytechnic Institute, and a mechanical engineer of wide experience in production and design, Mr. Pughe joins the Wheland organization as a part of their continued program of expansion.

EARL W. PUGHE

Gordon P. Street, President of Wheland, stated that Wheland's greatly accelerated research and design activities in Sawmill Machinery and the continued upswing of activity in the Manufacturing Division will continue at an even faster pace under Mr. Pughe. Wheland has made dramatic strides in modernizing its equipment. New Wheland electric and air operated heavy duty carriages and new edgers, trimmers and swing cut off saws are now in the field and further improvements and refinements in the entire Wheland Sawmill line are being constantly developed. Current manufacturing schedules are the largest in the company's history and further expansion is scheduled.

Half Inch Logging Co., Kernville, Ore., plans to construct a ferry crossing of the Siletz river for logging trucks 9 miles up stream from highway bridge.

Northwest Representative

Blasdel G. (Blake) Smith with, offices at 3146 E. Burnside Street, Portland, Oregon has recently been appointed the Northwest representative for ABCO Furnace Company of Fort Worth, Texas, a division of the Acme Brick Company.

ABCO specializes in the design, engineering and construction of industrial furnaces using waste fuel products including sawdust, shavings and hog fuel. Their hearth type furnaces excel in burning fuel of a high moisture content. A few recent installations include a 120,000 pound steam per hour bark burning unit for Southland Pulp and Paper Company; a 60,000 pound furnace for the Calcasieu Paper Company.

Correction

The LUMBERMAN is glad to correct a typographical error in a news item in the October issue, regarding a Skeen Electric Works electric carriage feed drive in the Clemans Forest Products Co.'s mill, Philomath, Ore. The article stated the carriage weighed over two tons. It should have read twenty-one tons. It also stated it had a forty-two inch all-Sumner 4 block carriage. This should have read forty-two foot.

G. E. Bass, left, E. C. Atkins & Co., Portland, Ore., and Russ Lynch, right, Brizzard-Matthews Co., Eureka, Calif., who recently visited the Atkins plant at Indianapolis, Ind.

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Change in Name and Scope of Activities

Herbert Fryer announces that the name of his lumber drying engineering firm has been changed to Fryer, Manson and Brogunier. The new company will have the benefit of Mr. Fryer's dry kiln patents and designs. The firm has been organized not only to give dry kiln engineering service but for the entire mill plant.

Mr. Manson was associated with Mr. Fryer before the war. After the war he joined the staff of the California Redwood Association to carry out a comprehensive study of the kiln drying of redwood. He is stationed in Berkeley, Calif.

Mr. Brogunier is a graduate engineer, having specialized particularly in structural design of all types of structures which might be required in a lumbering operation. Mr. Brogunier will make his headquarters with Lumber Dryers, Inc., at Chico, California.

Mr. Fryer has been engaged in the engineering of dry kilns since 1920, and was one of the pioneers of forced air circulation in lumber dry kilns and is responsible for many of the improvements in design of the modern kilns. Mr. Fryer's headquarters are at Carnation, Wash.

In British Columbia, Fryer-Cruickshank, Ltd., has been organized with Mr. Cruickshank as managing director. This company handles construction work as well as general engineering services. Mr. Cruickshank, has been associated with Mr. Fryer, except for the war interval, since 1934.

Install Gearmatic Transmissions

Gibson Bros. Logging Co., Vancouver, B.C., has purchased Gearmatic transmissions for donkey engines to be operated at its camps at Chamis Bay and Tahsis on the west coast of Vancouver Island.

Other Gearmatics have been acquired recently by the Elder Logging Co. at Sooke, and B.C. Forest Products, Ltd., for its logging operations on Britain River; also by the Jack Bushong Logging Co. in Tillamook, Wash.

These units are manufactured by the Gearmatic Co., 6th Ave., Vancouver, B.C.

Mack Truck Deliveries

Clinton Fisch, Blue Lake, Calif., log hauler recently took delivery of a Mack LFSW logging truck powered with a Mack 672 diesel engine. Fisch hauls for the Humboldt Plywood Corp. Pete Larson, log hauler of Arcata took delivery of an identical unit.

Don Beall, Ukiah, Calif., hauling logs for the Masonite Corp. recently purchased a Mack Model LJSW with a Cummins NHB Diesel engine, and a Mack LTSW powered with a Cummins NHBS.

Pine Logging Co., Dinkey Creek, took delivery of its fifth Mack LMSWL, powered with a Hall Scott gas engine. Ben Mast, Laytonville, purchased a Mack LJSW, powered with a 200 h.p. Cummins Model NHB Diesel engine for hauling lumber.

Frank Silva, Willits, Calif., lumber hauler, purchased a Mack LFSW lumber truck, powered with a Model 672 Mack diesel engine. Joe Costa and Bill Hutchins, partners in the Arcata Freight & Express Co., Arcata, Calif., recently took delivery of a Model LJS Mack Lumber truck, powered with a 200 h.p. Cummins Diesel engine.

Machinery Personals

Joseph Kuttler, for many years in charge of the Pacific Coast operations of the *Trailmobile Company*, with factory and offices in Berkeley, California, has resigned his position as vice-president and general manager. Kuttler joined the Trailmobile Company in 1917, when his company was one of the early pioneers of trailer transportation, and with the exception of a two year period in the early thirties when he was a consulting engineer to International Harvester Company, he has been continuously with the Trailmobile Company.

Vern Motley, formerly Eureka, Calif., branch manager of Buran Equipment Co., logging and sawmill supply and equipment firm, has been made northern California district manager of the company.

Dick Anderson, formerly Willits, Calif., branch manager is now northern California sales manager of the firm. *Dexter Knight* is now Eureka branch manager, and *Norman Ingersol* is Willits branch manager. *Jim Miller*, formerly with Carco in northern California is now representing Buran in the southern part of the territory; and *Bill Palmer*, represents the company from Garberville north.

John L. Collyer, president, The B. F. Goodrich Company has been elected a trustee of the Alfred P. Sloan Foundation.

Several changes have been made in the executive staff of The B. F. Goodrich Company's engineering division at Akron, Ohio. These follow the assignment of *H. E. Cook*, chief engineer for many years, to major engineering problems. These include direction of design and construction, and on corporate-wide utility, power and coal company property policy. *Frank Brown* has been appointed plant engineer of all Akron plants and *George Murphy* to the same post at Plant 4, reporting to Brown. *Clifford R. Augden* has been named superintendent of shops, also reporting to Brown.

The Board of Directors of The Timken-Detroit Axle Company has elected *Fred W. Parker, Jr.* a Vice-President of the Company. Parker, who is an engineering graduate of Cornell University, has been associated with The Timken-Detroit Axle Company since 1927.

A. G. Fitzgerald formerly credit manager of Loggers & Contractors Machinery Company, Portland, Ore., has been appointed manager of the company's Eugene, Oregon, branch. He will be succeeded at Portland by George W. Fatt, formerly in the construction business at Eugene and previously with the Balzer Machinery Co., Portland. Mr. Fitzgerald was formerly with the Caterpillar Tractor Co. He joined Loggers & Contractors in 1947 as branch manager at Klamath Falls. He became credit manager in Portland in 1948.

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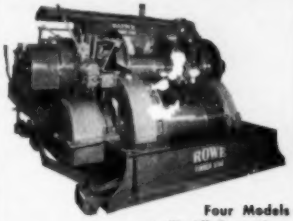

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1—Double 56" Circular head rig, all steel roller bearing.
1—6x54" Roller bearing edger.
1—64" Horizontal Turner resaw (3 mo. old). Roller Bearing Complete.
1—Portland Iron Works 26' automatic trimmer.
1—500 H.P. Diesel engine.
1—Diesel electric generator set.
1—6x15" Ball bearing planer with profiles.
3—Electric motors to accompany.
Also complete planer sorting chain.
1—50' Refuse burner.
2200 ft. #78 Chain.
600 ft. 1x6 Conveyor chain.
Complete filing room equipment (practically new).
Miscellaneous fire pumps and air compressors.
1—Electric chain pond saw.
2—Unloading machines at pond.
Miscellaneous conveyors, chain, motors, etc.

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1x10	62- 65
1x12	65- 74

No. 1 Common Timbers and Plank

3x3 6-30	$55-$60
3x3 22-24	57- 62
3x3 26-32	64- 69
3x10 6-20	52- 57
3x10 26-32	61- 66
3x10 22-24	54- 59
4x4 6-20	53- 58
4x4 22-24	56- 61
4x4 26-32	62- 67
6x6 8-20	50- 55
6x6 22-30	56- 61
6x6 32-40	62- 67
8x8 8-20	50- 55
8x8 22-30	56- 61
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No. 1 Dimension (Green)

2x4 6-24	$51-$56
2x6 6-24	49- 54
2x8 6-24	49- 54
2x12 6-24	48- 53

Sel. Merch. (Green)

1x4 6-20	$58-$63
1x8 6-20	65- 70
1x12 6-20	70- 75

Log Prices

OREGON

Following prices have been quoted F.O.B. rafted in the Willamette River:

Douglas Fir Peelers—No. 1, $90.00; No. 2, $75.00; No. 3, $60.00.

Douglas Fir Sawmill—No. 1, $55.00; No. 2, $45.00; No. 3, $35.00.

Hemlock Peelers—$45.00.

Hemlock Sawmill—No. 1, $34.00; No. 2, $32.00; No. 3, $30.00.

White Fir—$1.00 less than Hemlock or same.

Noble Fir Peelers—$50.00-$60.00, otherwise the same as Hemlock.

Cedar—Lumber, $75.00; shingle, $35.00.

Spruce—Selects, $70.00; No. 1, $50.00; No. 2, $45.00; No. 3, $30.00.

Market is generally strong on everything but hemlock and cedar—and these are better than 60 days ago. Some sales reported at higher than these on D.F. saw mill logs.

PUGET SOUND

Douglas Fir—No. 1, $45.00-$50.00; No. 2, $35.00-$40.00; No. 3, $30.00; Peelers—$70.00 to $85.00.

Hemlock—$30.00-$35.00.

Cedar Lumber—$60.00 to $65.00; Shingles, $25.00-$35.00.

Spruce—Sel., $65.00-$70.00; No. 1, $45.00-$50.00; No. 2, $35.00-$40.00; No. 3, $30.00-$32.00.

Douglas Fir Plywood

1-4 Basis Interior, $75.00-$85.00.

Pine Prices

Following Delivered Prices, based on Past Sales, were reported to the Western Pine Association by members during the period December 5 to December 17, 1949 inclusive. Both direct and wholesale sales are included and are based on specified items only. Two districts are given, one being the State of Illinois, outside of the Chicago Metropolitan district, and the other the State of Pennsylvania. Quotations follow:

PONDEROSA PINE

Selects S2 or 4S	1x8"		5/4 RW	
	Illinois	Pa.	Illinois	Pa.
C. Select RL	$179.21	$189.33	$302.54	$307.07
D. Select RL	151.12	139.87	173.55	158.57
Shop S2S	No. 1		No. 2	
5/4	122.90	120.82	98.50	97.70
6/4	119.93	130.00	98.46	.....
Commons S2 or 4S	No. 2		No. 3	
1x8" RL	107.80	101.52	77.28	76.98
1x12" RL	108.26	109.96	78.41	88.62
4/4 #4 Common S2 or 4S RW&L			.....	62.40

IDAHO WHITE PINE

Selects S2 or 4S	1x8"		6/4 RW	
Choice (C) RL	212.00	219.83	.....	.....
Quality (D) RL	175.97	180.59	191.75	223.06
Commons S2 or 4S	Colonial (#1)		Sterling (#2)	
1x8" RL	136.50	141.25	128.33	131.49
1x12" RL	164.00	169.00	133.93	135.95

SUGAR PINE

Selects S2 or 4S	4/4 RW		5/4 RW	
B&BTR RL	.....	197.50	.....	229.12
C. Select RL	.....	188.50	209.00	219.64
D. Select RL	.....	162.50	180.00	196.00
Shop S2S	No. 1		No. 2	
5/4	138.00	132.25	102.00	107.75
6/4	140.50	132.25	108.65	107.75
8/4	150.96	140.25	110.30	113.75

LARCH-DOUGLAS FIR

#3 Common S2 or 4S 1x8" RL	75.88	.....
#1 Dimension 2x4 RL	89.02	.....
#1 Dimension 2x6 RL	89.78	.....

Takes Canadian Manufacturing Rights

Heaps, Waterous, Ltd., New Westminster, B. C., has taken over the Canadian manufacturing rights or the Pacific planer and matcher, manufactured in Seattle, Wash. by the North End Machine Works, Inc.

Camp and Mill Portable Phones

A 20 mile reception from field telephone using two flashlight batteries is being offered by the Grand Hawthorne Surplus Co., Portland, Oregon. These phones are said to be as simple to use as a house phone. All sets are tested and guaranteed, complete with leather case. They also offer a half mile reel of twisted pair telephone wire in connection.

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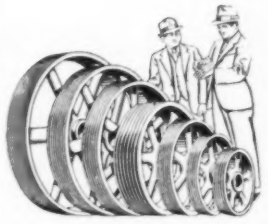

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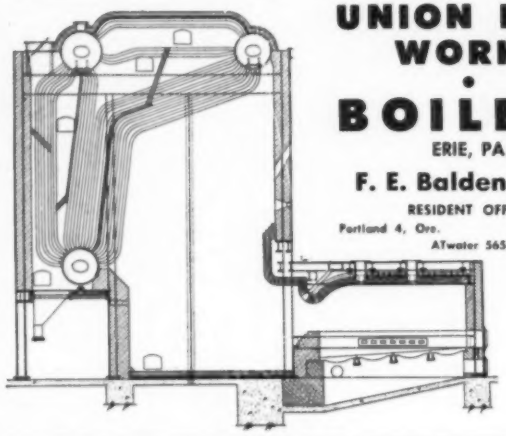

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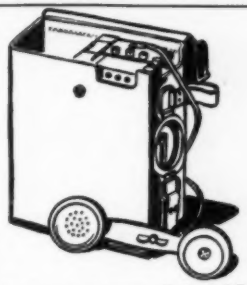

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2 drum loader gas motors.
New 10 ton self-propelled LORAIN Crane.
Several reconditioned portable sawmills, 15,000 FBM capacity.

P. L. CROOKS & CO. INC.
2145 N.W. Pettygrove St.
Portland 10, Oregon
CApital 1964

LUMBER BUYER AVAILABLE

Located southern Oregon. Twelve years' experience, West coast soft woods; wide mill acquaintance. Will consider percentage and expense arrangement with established eastern wholesaler. Aggressive, excellent references. **c/o Box 671, The LUMBERMAN, 71 Columbia St., Seattle 4, Wash.**

FOR SALE

One 6 x 9", 8-knife #91 Yates matcher complete with feed table and belts. Ball bearing side spindles. Ball bearing top profile. Babbitt bearing top and bottom cylinders. Babbitt bearing bottom profile. No motors or heads.

Yates #91, 6 x 20", 6-knife top and bottom babbitt bearing cylinders. Ball bearing side legs. No profiles. Complete with belts and feed table. No motors furnished and no side heads.

*Both machines are now in operation, and can be inspected at any time.

Weyerhaeuser Timber Co.,
Snoqualmie Falls Branch
Snoqualmie Falls, Washington

FOR SALE

Band Mill—Six foot Band Mill in Southern Louisiana now in operation cutting Hardwoods and some Pine. Timber available, also good contract loggers plentiful. Can be bought for cash or terms. **Write Box No. 674, c/o The LUMBERMAN, 71 Columbia St., Seattle 4, Wash.**

WANTED: SAWMILL

Do you have a sawmill with planing mill for sale which has possibilities for development? Must have timber. Must be on rail. Capacity desired, 40 to 50,000 board feet. **Write Box No. 672, c/o The LUMBERMAN, 71 Columbia St., Seattle 4, Wash.**

Wanted: Planer 6x20 8-Knife Machine complete with feed table. Machine must be in excellent condition.

For Sale: One 12" Vonnegut Moulder with profiles (Top & Bottom) 1948 Model.

CENTRAL LUMBER OF
OREGON, INC.
Baker, Oregon
P.O. Box 784 Phones 1422 or 1663

OPPORTUNITY

We would like to contract for the output of a Band Mill cutting Southern Hardwoods. We will finance your lumber on your yard, green from the saw. **Midland Valley Lumber Co., 508 N. Grand Ave., St. Louis 3, Mo. Telephone FRanklin 1302.**

WANTED

Position as Shipping or Plant Superintendent. Thirty years' experience in pine and mixed woods. Can successfully handle men and get production. References. Write Box No. 670, c/o THE LUMBERMAN, 71 Columbia Street, Seattle 4, Wash.

LUMBER BUYER

Reliable and active with long experience in West Coast lumber, having established contacts with many good mills of the Pacific Northwest. Will buy for Eastern wholesale connections on a low shared expense basis. Write Box No. 650 c/o West Coast Lumberman, 71 Columbia St., Seattle 4, Wash.

Logging superintendent desires connection with reliable company—well qualified Cat and truck logger—also road marking and construction. Clean cut or Forest Service methods—15 years—good references. Any locality and offer considered. Write Box No. 669, c/o THE LUMBERMAN, 71 Columbia, Seattle 4, Wash.

LOGGING SUPERINTENDENT

Wanted for pine operation in northeastern California. Annual production 30 MM feet by cat, truck and private railroad. Good equipment, 125 man camp and 50 miles railroad to maintain and operate. Furnish age, education, experience and references to **Box 675, c/o The LUMBERMAN, 71 Columbia St., Seattle 4, Wash.**

WANTED TO PURCHASE

From one to twenty-five cars of No. 1 Shop S4S California Redwood. Size 2x6 in random lengths, kiln-dried or thoroughly air-dried. Prices quoted must be F.O.B. Central Islip, Long Island, New York.

Kaufman-Allied, Central Islip, Long Island, New York

Are You Moving?

If so, please let us know your new address. We want you to get your copy of WEST COAST LUMBERMAN promptly.

●

CIRCULATION MANAGER

NEW AND USED EQUIPMENT FOR SALE

3—New 150 KW G. E. Transformers, Type HS, Form W2R, Voltage 7200-12470Y 240/480, 60 Cycles, Additive Polarity.

1—Almost New 100 KVA Diesel Electric Power Plant, mfg. by General Motors, consisting of 2-50 KVA direct Coupled Diesel Electric Units mounted on a movable base with complete switch board for single or Parallel operation, 120-208-480 Volts, 3 Phase, 1200 RPM, 90% Power Factor.

1—Used G. E. Synchronous Condenser, No. 559469, Type AT1, Class 10-600, KVA-720, Form S, AMP 158, 2200 Volts, 60 Cycles, 3 Phase. This unit is for Power Factor Correction but could be used for a motor or as a generator.

KYNELL INDUSTRIES, INC.
Blaine, Wash.

MACHINERY BARGAINS

PLANERS & MATCHERS

1—#77A Model 5 American, 6 x 15", 8-knife, double profile with jointers, 3 pair sideheads. Factory rebuilt 2 years ago.
1—#404 Woods 6 x 15", 6-knife heads.
1—#91 Yates 15 x 6", 8-knife, with belts and feed table.
1—#91 Yates 9 x 6", 8-knife, double profile, with belts and feed table.
1—#24 Woods 6 x 15", 4-knife square heads
1—#7A4 Stetson-Ross 6 x 15" ball bearing, 8-knife, 9 pair sideheads, 100 HP motor, feed table.
1—#15 Berlin 16 x 30" Timber Sizer, rebuilt.
1—8" Woods Drop Bed Sticker with 40 HP electric motor.
1—#186 Yates Double Surfacer, 6" x 30".
1—#8B Newman Planer & Matcher.
1—#500 Newman Planer & Matcher.
1—#512 Newman Planer & Matcher.
1—4" Poulson Moulder.
1—4" Vonnegut All-Electric Moulder.
1—6" Vonnegut All-Electric Moulder.
1—12" Vonnegut All-Electric Moulder.

SAWMILL EQUIPMENT

1—#111 American 54" Vertical Band Resaw.
1—48" Sumner Heavy Duty Ball Bearing Cut Off Saw.
1—#1 American Portable Saw Mill.
1—#3 American Portable Saw Mill.
2—#4 Star Saw Mills.
1—4" x 32" Star Gang Edger with saws.
1—4" x 30" Miner Edger with saws.
1—4" x 36" Miner Edger with saws.

MACHINE TOOLS

1—New Cincinnati-Bickford 4'9" Radial Drill with 3 HP, 3 phase motor and controls.
1—New Cincinnati-Bickford 21" Round Column Radial Drill with motor and controls.
1—New Lodge & Shipley 16/20" x 126" Engine Lathe.
1—8 x 16" Kalamazoo Metal Band Saw.
1—Cincinnati #2M M.D. Milling Machine.
1—28" Gould & Eberhardt M.D. Shaper.
Used and New 20" and 21" Drill Presses.

"BETTER YOUR BUSINESS WITH BETTER MACHINERY"

AMERICAN Saw Mills
DIAMOND Fuel Hogs and Chippers
DIEHL-VONNEGUT Moulders
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NEWMAN Planers and Matchers
ROGERS Knife Grinders
SIMONDS Saws and Steel
STAR Saw Mills

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LIQUIDATION SALE OF WEST GATE LUMBER CO.

AT SWEET HOME, OREGON

ALL EQUIPMENT AVAILABLE FOR IMMEDIATE DELIVERY

For Prices and Complete Information Phone, Write or Wire West Salem Machinery Co.
WEST SALEM, OREGON

Circular Headrig, 48" dia. saws, anti-friction bearing, top and bottom arbors, belts, pulleys, saw guides.
All-steel frame Carriage, new in 1947, 20 ft. long, 3 headblocks, anti-friction bearing trucks. Electric setworks, electric dogs, 70 ft. flat and V rail.
Filer & Stowell Pacific Coast type 8"x60" 5-saw edger with saws.
Mershon 66" Vertical Resaw. Hand setworks. Extended shaft for belt drive. 75 HP, 900 RPM, 440 volt motor with pulley and belt. Saw grinding equipment and spare saws included.
24-ft. 13-saw Air Trimmer. 21 feed table chains. 75 HP, 600 RPM, 440 volt motor with controls, belting, pulleys and shafting.
Yates No. 91 6"x30" belt driven 4-side Planer with 150 HP slip ring motor direct connected. Steel frame feed table. 6 spiral grooved feed rolls, and double pineapple, roller chain driven by 15 HP slip ring motor. Double pull-up chain, 5 HP gearhead motor drive, incline transfer to feed rolls, 3 HP gearhead motor drive. New American Sheet Metal Works 66" dia. exhaust fan direct connected to 75 HP 1200 RPM GE Tri-Clad motor. Manifolding, blower pipe, grinding equipment and spare heads included.
100 ft. Sorting Chain, 2 sections each with reduction motor drive.
20-ft. 2-Saw Wheland End Trimmer, cast iron stands, wood frame.
14 Roll Cases, 18" to 36" wide, 12 ft. to 80 ft. long, chain driven, gear driven, and with gear and friction drives.
16 Transfers, 2 to 6 chains wide, No. 78 and No. 130 roof top chain 4 ft. to 30 ft. long, 10 ft. to 30 ft. wide, with gear and friction drives.
6 Conveyors No. 78, No. 82 chain and ¾"x6" and 1"x6" round link chain with drives.
1 Refuse Burner with 5 HP motor driven blower.

Log Haul — Canting Gear — Trim Saws — Pond Saw — Unloading Donkey — Cranes — Filing and Grinding Room Equipment — Electric Motors 1 to 150 HP — Gear Motors — Electric Switches and Controls — Shafting — Boxes — Sprockets — Gears — Chain — Belting and numerous other pieces of sawmill equipment.

LATE MODEL MACHINE TOOLS

Priced Reasonably — Immediate Delivery

1—Monarch late type geared head Lathe, 24½" swing, 120" centers, 16 speed, threading range 1½ to 72 threads per inch. 18" four jaw chuck, 12" three jaw chuck, face plate, steady rest.
1—Reed-Prentice double back geared Lathe, 30" swing, 120" centers, taper attachment. 10 HP motor. Drive-all.
2—Monarch late type geared head Lathes, 16" swing, 54" centers, taper attachment, 3-jaw chuck, 4-jaw chuck, face plate.
1—Bausch 36" Boring Mill, 2 heads, 30 HP motor drive.
1—Smith & Mills late type 16" back geared Shaper, dial stroke and feed control.
1—Mueller 36" Radial Drill, 9" round column, 3 HP motor drive.
3—Only Jones and Lamson Turret Lathes and Tools.
1—Milwaukee 3-B Milling Machine, double overarm, 5 HP direct motor drive.
1—Cincinnati Bickford 36" Drill, back geared, reversible No. 5 taper.
1—Wolcott Quick Change Engine Lathe, 18" swing, 128" between centers, 11½" swing over carriage, taper attachment, steady rest, face plate, 4-speed Do-all drive with 3 HP 1200 RPM motor.
1—Landis Belt Driven Threading Machine, capacity 1½".
1—Floor Type ½" capacity Drill Press with ¼ HP motor.
1—Belt Driven Double End Grinding Arbor. Capacity 18"x2½" grinding wheels.
1—Toledo No. 3 Geared, adjustable Pipe Threader, capacity 2½" to 4".

LATE MODEL LUMBER CARRIERS

1—Gerlinger Model 4MH, size 45x60. Tires 7.50x20.
1—Gerlinger Model 4MH, size 45x60. Tires 7.50x20.
1—Gerlinger Model 4MH, size 45x60. Tires 9.00x20.
1—Gerlinger Model SMH, late model, size 45x60. Tires 9.00x20.
1—Gerlinger Model SMH, late model, size 45x60. Tires 9.00x20.
1—Hyster "Yardmaster" Senior Model MH Straddle Truck, size 57x78. Tires 11.00x20.
All above items subject to prior sale.

West Salem Machinery Company

7th ST. AND MURLARK AVE. WEST SALEM, OREGON TELEPHONE 2-1425

BADER & CARROLL OFFER

OUTSTANDING BUYS

IN SAWMILL and LOGGING EQUIPMENT

SAWMILL EQUIPMENT

HEADRIGS

1—Lane cast iron frame top and bottom arbor, 54".
1—Top arbor only, complete with bearings — 2 11/16"x84".
1—Bottom arbor only, complete with bearings — 2 15/16"x88".
1—Top and bottom 60" circular.
5—New American Top saw rigs.
1—Allis 8-foot.
1—New Allis 8' Roller Bearing Band Head Rig.

DECK EQUIPMENT

2—8"x10" Oscillating Hilltype Steam Nigger.
1—Belt Driven Cable Log Haul.
1—Belt Driven Overhead Canting Gear.

CARRIAGES

1—Filer & Stowell—3-block 44", rack and pinion steam setworks. (Can furnish hand or electric setworks). With rails.
1—Wood frame—16' long—3 screw blocks 60" opening, 4 set wheels, 12" diameter, 2 15/16 axles, rope and friction drive set works.
1—Wood frame—16'—3 rack and pinion block—50" opening, hand set, spring receder, 4 set wheels, with 1 flat rail and 1 V-rail.

CARRIAGE FEEDS

New Soule with Twin Engines.
1—Used Soule 5x6 Twin Engines.

EDGERS

1—Prescott 8x60—4-saw Pac. Coast stub type.
1—Diamond 8"x96—8-saw Double Table type.
1—Allis Table 6x36" BB—3-saw Double Table type.
2—Tower 3x27" 2-saw table, new.
1—Sumner 6x48" 4-saw, BB arbor, stub type.
New Tower 5x42 4-saw Table Type.
Used Phoenix 4x42, 3-Saw Table Type.

ROLLS — TRANSFERS — CONVEYORS

Large stocks available.

TRIMMERS

1—New Tower—2-saw—20' one-man type.
New Irvington automatic and random length.

HOGS

New "All Steel" No. 35, No. 45, No. 60.
S. H. Diamond No. 40.
Used M & M No. 5-A, 36" rotor V type.

LATH MILL

1—2-man lath mill with bolter and stripper on same frame.

PLANING MILL AND REMANUFACTURING EQUIPMENT

BAND SAWS

1—Davis & Wells 20"—1 H.P., 220/440 V.
1—American 36", V-Belt drive with 2 H.P. motor.

RADIAL ARM SAWS

1—Monarch Unipoint Model X36A, 5 H.P., 3-60-220/440V. motors with tables. New.
1—Comet, Model J—1 H.P. 3-60-220.

SHAPER

1—Davis & Wells 1.5 H.P., 220/440 V.
1—Shopmade Single Spindle, 2 H.P. Motor.
1—F & E Double Spindle, Motor Driven, 5x7½ HP 3-60-220/440.

JOINTERS

New 6"—Round head, belt driven.
1—Porter 12" round head with motor.
1—Berlin 16" round head.

TENONERS

1—Newman—Single end with motor.
1—Hayes Double End, 8 ft. with motorized copes, Cut-off Saws & Tenoner Heads, 7'3" Arms with 25 HP Motor.

DADO MACHINE

2—New Britain Vertical Dado Machines.

SANDER

1—Yates-American No. 12 Column Sander.
1—Berlin Royal Invincible 72"—3 roll spiral.
1—Berlin Invincible 54" V-Belt Drive.
1—Yates No. 403, 36", 3-Drum Roll Feed, Motorized.
1—6" Motorized Shop Made Belt Sander.
1—No. 206 Jefferson endless belt sander.

ROUTERS

1—Unit—Portable Router.
1—Kelly—heavy duty with stair attachment.

PLANERS

1—Stetson Ross—travelling bed—2-head, 36".
1—Woods No. 19—12x30, square head sizer.
1—Berlin No. 41—14x30, square head.
1—American Sweepstakes—6x24, square head, with motor, blower and motor, and pipe.

MOULDERS

1—American No. 3, 4x6, Sq. Head—Belt Drive.
1—Levi Huston, 3".
1—Huston, 6", 4-Head, Square.

LIQUIDATION CLEAN-UP

MILL CITY MFG. CO.,
MILL CITY, OREGON

•

Complete Sawmill, Resaw Mill, Planing Mill, Carriers, Lift Trucks, Cranes, etc.

SAWMILL—Log haul, automatic trimmer, rolls, transfers, conveyors, steam engines, electric motors.

RESAW—64" sawmill resaw, line bar roll feed, blades, motor, filing room. Complete.

PLANING MILL—Yates 91 planer and matcher, 6"x15" round head 8-knife double profiles, feed table, trim saws, blower, pipe, cyclone.

CARRIERS AND LIFT TRUCK—Gerlinger model PH 622-130, lift truck, Gerlinger model 5 MHS 45"x60" carrier.

GOOD EQUIPMENT available for immediate delivery—PRICES ARE LOW. Inspection invited—Salesmen at the Mill.

FEED TABLES

New G.M. Co.—all steel—ball bearing.
1—Yates F2, 18"x18'.

RESAWS

1—American No. 4 Circular—24" Saw.
New McDONOUGH 54" & 44"—WE ARE AGENTS. SEND FOR DESCRIPTIVE CIRCULARS, PRICE AND DELIVERY.

RECENT PURCHASE COMPLETE MILL

SAWMILL COMPLETE
Top and bottom Saw Husk — Timber Frame. Top Saw 40" I.T. Babbitt Bearing. Bottom Saw 54" I.T. Ball Bearing.

CARRIAGE—20 foot, 3 R & P Blocks, 48" Opening. Hand Setworks with Track.

EDGER—No. 0, 4x32, 3 saw.
1 Sumner 18" Standard Shingle Machine, Belt Driven with Packing Frame and Saws.
1 Engine Lathe, Rahn Meyer, 20"x14'6" I.C.G. with 14" and 18" Chuck.

SAW TABLES

2—American No. 1 Variety.
1—American No. 1 double end trim saw—8" to 78".
1—American No. 11—saw and dado machine.
1—New Parra James 12" tilting arbor.
1—Greenlee No. 451 saw and dado machine.
New Foster tilting arbor 8" table saws.
New American tilting arbor, 8".
New American tilting table, 8".
New Shopmaster tilting table saws.
1—Bentle Push rip-table, 36x30 with 7½ H.P. motor.

ROUTERS

1—Onsrud Wall Mount Type, 1½ H.P., 14,750 RPM.
1—Onsrud Wall Mount Type, 5 H.P., 14,850 RPM.

SURFACERS

1—Bertin No. 177 12x30 double, belt driven.

SWING SAWS

New—Irvington "Model" and Model B.
New—Irvington 3 and 5 H.P., 38", 48" and 60" arm.
Used—Irvington No. 35 with motor.
New—H & A—1 H.P., 16" blade.
Rebuilt belt-driven, 36" and 48" arm.

BOX FACTORY EQUIPMENT

1—North Machine Co. "ACME" Automatic Printer, motor drive, chain hopper feed, safety clutch.
3—Woods semi-automatic box board cutoffs.
1—Grammes—4-track—cigar box nailer.
1—Doig—12-track—51"—open back.
1—Morgan 7-Track Nailer, closed back, 1½ H.P. motor.
1—Morgan 9-Track Nailer, closed back with side arm.
1—M J Cleat Machine.
1—Irvington No. 35, used.
2—Irvington Hill automatic cutoffs.
1—Calif. Cleat Machine, Motor driven, 15 HP—3-60-440 & ¾ HP Speeditrol Motor on Feed.

FILING AND GRINDING ROOM EQUIPMENT

Desendable cup wheel, 30" and 36" knife grinders.
1—Covel No. 100 R band saw grinder, complete with stands, belt driven.
New dependable motorized cutter head grinders.
New Gisse 16" movable roll saw stretchers.
New Gisse 8" stationary roll saw stretchers.
New levelling blocks—all sizes.
New Gisse circular saw hand gummers.
1—Simonds No. 1 Swage.
1—Covel No. 119 gang saw grinder.
1—Covel 6" Band Saw Stretcher B D.
1—Covel 8" Band Saw Stretcher B D.
1—8x24x6 Leveling Block.
1—10x36x3½ Leveling Block.

STERLING ELECTRIC MOTORS

Sterling New Standard Motors, 1 HP to 25 HP.

Sterling New Geared Motors, ½ HP to 15 HP.

Used Motors, 2 HP to 200 HP, all types.

Exceptionally large stock in all sizes and speeds available for immediate delivery.

SPECIALS

1—D7 Cat No. 96 with angle dozer.
1—Gerlinger carrier, 42x48, stiff shoe.
1—Graham double shaft grinder, 2 H.P., 3-phase motor.
1—250-lb. belt-driven power hammer.
New electric hoists.
New and rebuilt chain blocks.
New Champion portable forges and blowers.
New power hacksaw machines.
Rebuilt BB ratchet jacks, 15-ton to 75-ton.
1—Rebuilt 2500-lb. capacity Howe scale, dormant type.
1—Portable 105-foot Air Compressor, Ford V-8, gas driven on 2-wheel trailer.
New Champion Bench and Floor Drills—15", 16", 20". Motor driven.
Several Portable Electric Driven Air Compressors, 10 to 24-foot.
New Hein-Warner 12-ton truck, hydraulic jacks.
New Portable Blacksmith Forges and Blowers—all types and sizes.

TOO LATE TO LIST:
Sash and Door Machinery; Stile Borer Clamps; Panel Raiser; Shaper; Cutoff Saws, etc.

Wire — Phone — Write

BADER & CARROLL

LIQUIDATIONS — INSPECTIONS

122 S. W. FIRST AVENUE
PORTLAND 4, OREGON

PHONE CA. 1013

CROWN MACHINERY & SUPPLY CO.

NEW AND USED
SAWMILL MACHINERY, LOGGING AND MILL SUPPLIES

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GEO. C. HAYNER — FRED D. SWENSSON
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DISTRIBUTORS OF

PHILADELPHIA GEAR WORKS INC.
SPEED REDUCERS, GEAR HEAD MOTORS, ETC.
BAND MILLS AND RESAWS

1 8-ft. Prescott Ball Bearing.
1 84" Marshon Band Resaw.
1 30" Fay Egan Circular Resaw.
1 9-ft. Filer & Stowell Band Mill.
1 Berlin V 54 Band Resaw.

PLANERS

1 Yates A4, 8x15, 6-knife, P&M, with feed table, motors, blower system, feed-up chains, and sorting table. A complete unit.
1 Stetson-Ross 7-A-4, 6x15, 8 knife, P&M, with motors, feed tables and belts.
1 Fay Egan A-140, 8x30, motorized double surfacer with 4-knife round heads.
1 Yates P-16, 24x30 Timber sizer with motors and belts.
1 Woods planer feed table.

EDGERS

1 10x60 Sumner Edger.
1 6x60 Klamath Table Edger.
1 8x72 Allis-Chalmers Edger.
1 4x40 Portland Iron Works edger with 50 HP motor.

STEAM FEEDS

1 14x18 Direct Connected.
1 13x16 Sumner Camel Back.
1 12x18 Allis Camel Back.
2 10x12 Portland Iron Works direct connected.
1 14x12 Filer & Stowell shotgun.
1 18x20 direct con. 56" drum.
1 12" Prescott shotgun.
1 8½x8 Ship haul feed.
1 Speedee steam feed.
1 7x8 steam feed.
1 9x12 Wheland direct.
1 9x12 Wheland geared.
1 12x16 Direct connected.
1 20x24 Direct Connected Steam Feed, good order, cheap.

LOGGING EQUIPMENT

1 Hesse-Ersted double drum with 6 cylinder Chrysler gas engine. Also suitable for logging or loading.

MISCELLANEOUS

1 pr. 16x22 Atlas Twin engines.
1 18x24 HS&G engine.
1 150 HP Cummins Diesel.
1 8"x10"x60" Nigger.
1 No. 25 Diamond bob, bearing hog with base.
1 No. 45 Diamond hog, babbit bearings.
1 Log step and loader, 16x24 cylinder.
1 14x40 Wicks gang saw.
1 30"x30"x10 ft. Cincinnati Iron planer.

MOTORS

1 75-1200 GE type 1 squirrel cage.
1 300-720 GE slip ring.
1 50HP-1200 RPM sq. cg. 440 v.
1 200HP-720 sq. cg. 440 v.
1 250HP-600 sq. cg. 2300 v.
1 15HP-720 slip ring 440 v.
1 5HP-900 sq. cg. 440 v.
1 15HP-30 RPM gear motor.
1 1HP-70 RPM gear motor.
1 Sumner Electric Power Set Works.
1 Port. Iron Wks. power setworks complete (New).
1 Lot of Shingle Mill Machinery.
1 Irvington Floor swing cut off saw.
1 Irvington 5-ft. electric swing cut off saw.
1 Hyster Fork Lift Truck (cheap).
1 Covel Band Resaw grinder.
1 No. 150 band saw grinder—16" saws.

We are interested in purchasing or liquidating your plant.
All kinds of used chain, steel, flat and round, angles, etc. Inquire about our small Simonson type turner, air or steam. All sizes air compressors.
We are distributors for the Swedish gang saws, electric carriage and electric planers feeds. Give us a call.

OPPORTUNITY

FOR SALE or will LEASE to well established mill in Redwood District—Rebuilt 404 Woods Planer and Matcher 9x15, all ball bearing, double profiler; eight knives thruout; eased edge; complete with Motors, Feed Table; belts, hoods, extra knives, etc. **W. P. Smidt,** 1503 Parsons Drive, Santa Rosa, Calif.

MILL & TIMBER FOR SALE

Completely equipped modern Band Saw with resaw, nearly new, 60M. per 8 hour day and 860 million feet Redwood & Fir timber, good transportation and logging conditions—A Money maker, for Particulars write

E. A. JOHNSON, 1440 Broadway, Oakland, Calif. Zone 12.

GENERAL MACHINERY COMPANY

122 S.W. FIRST AVE. — PORTLAND 4, OREGON — ATWATER 6573

LUMBER HANDLING EQUIPMENT

2—Hyster Model 150 RT lift trucks, 15000 lb. lift.
2—Model 16 HT Ross lift trucks, 12000 lb. lift.
1—Model 18 HT Ross lift truck, 10000 lb. lift.
1—Model 19 HT Ross lift truck, 7500 lb. lift.
1—Hyster Model VT75 lift truck.
1—Hyster Model DT lift truck solid tires.
1—Gerlinger lift truck, solid tires, Ford V-8 motor.
1—Hyster Model JT lift truck, solid tires.
1—Ross Carrier Model 90G, 52 x 58 package.
2—New Model 70 Ross Carriers, one 42 x 42 package, one 52 x 54 package.
1—Model 12X Ross Carrier, 42 x 48 package.
1—Model 11 Ross Carrier, 42 x 48 package.
3—Model 90 Ross Carriers, 52 x 67 packages.
1—Hyster Utility, V-8 motor, 42 x 48 package.
1—Hyster Utility, Hercules motor, 42 x 42 package.
1—Model 90 Ross Carrier, 42 x 43 package.

PLANING MILL EQUIPMENT

Woods 404 DM motorized, 15x6, 8-knife p'aner and matcher, feed table, elect. controls.
Yates No. 91, 20x6, planer and matcher arranged for belt drive, ball bearing side head spindles, automatic feed table.
Yates No. 91, 9x6, planer and matcher, belt driven, double profiles, automatic feed table.
Yates C-1, 16x6, moulder, 6 head, 6-knife, round top and bottom cylinders.
Yates C-4, 4x8 moulder, slip head type, motorized side heads.
American No. 20, 4x8 square head sticker, hoods, branch pipes, 20 HP motor and starter.
American 44" chain feed band Ripsaw.
Greenlee No. 425 self-feed Ripsaw.
New General Self-feed Ripsaw, extended arbor for gang ripping, belt drive.

No. 7—Ripsaw

Feed Table

Woods No. 226—30" automatic knife grinder.
Berlin No. 275—30" automatic knife grinder.
Yates M-7 side head grinder—motorized.
New Knife Balance Scales.
Reconditioned 80" Exhaust Fan, ball bearing, belt drive.

Above Offered Subject to Prior Sale

Machinery Bargains

SAWMILL EQUIPMENT

Log Step and loader 18-24 A.C. steam cylinder.
Log Turner, Simonsen 14".
8" and 10" x 5' Osc. Hill Nigger.
60" 4-block carriage with No. 3 Trout Setworks.
54" 3-block screw carriage with AC setworks.
2-arbor husk complete.
Cant Lowerer 10" x 24" cylinder.
Cant Flipper 12 x 21 cylinder.
14 x 72" Allis Edger with 250 H.P. 440 V. motor.
No. 4 Hammer Hog.
No. 35 Diamond Hog.
84" Marshon L. H. Resaw.
470 CFM Air Compressor I.R.
1200 H.P. Boiler Feed Heater.
150 7' kiln trucks.
80 6' kiln trucks.
2 complete dry kilns.
3 60" head saws.
600 ft. 1½ x 6 chain.
1 48" head saw.
1 circular resaw 36" saw, 16" opening.
1 F & S head block 72" complete.

FILING ROOM EQUIPMENT

1 16" welding clamp.
No. 120 L. Covel Grinder.
No. 95 Covel Grinder.
Covel Hand Gummer.
30" American Knife Grinder.

ENGINES

2 GM 165 H.P. Diesels.
1 12x18 AC Feed engine.
1 12x16 Twin Atlas engine.
1 7½x8 twin engine.
1 6x12 twin engine.
3 Crowding engines.

MISCELLANEOUS

1 Willamette Mod. CP-7 Lumber carrier.
2 No. 12 Ross, Pneumatic tires, lumber carriers.
1 Vault door.
1 30" Gate Valve.
1 Jarecki 2½" to 6" pipe threader.
1 Williams 4" pipe threader.
3 333 KVA transformers 2200 to 440 v.
1 24 KVA transformer 2200 to 440.
1 Safe 28"x30"x44".
1 5-ton chain block.
2 4 KW transformers 2200 to 440 v.
1 Cone gear and pinion.
1 P M Power saw, 30" blade.
1 2-ton Budget hoist.
1 1-ton Budget hoist.
1 ½-ton P & H Elec. hoist.
1 40-man speeder.

GOLDSTEIN & BLOCH

Box 33 — AB. 1234 — ABERDEEN, WASHINGTON

Used Machinery Bargains

1 7-Ft. Clark Band Mill, rebuilt.

1 10-Ft. Allis Band Mill.

1 84" Mershon Resaw, Left.

1 Allis-Chalmers Pacific Coast Type 78" Carriage 4-block, 3-wheel (2 flat 1-V) 8 sets trucks, 20" wheels, 3 7/16" axles, 4 sets Allis offsets, No. 4 Trout rope driven power set works. Blocks are screw type, low knee with cant hook dogs, Steel Carriage frame.

1 72" Opening Allis-Chalmers Screw Block Carriage, Trout Set Works.

1 48" Allis-Chalmers Rack and Pinion Carriage.

1 Set of three 66" Opening Allis-Chalmers Screw Blocks, complete with Trout Set Works.

1 6" x 54" Ball Bearing Stub Edger.

1 15x20 Sumner Camel back geared Steam Feed.

1 14"x42-Ft. Filer & Stowell shotgun steam feed.

1 120 cu. ft. Gardner Denver Belt Driven Air Compressor.

1 8"x8" Curtis Air Compressor.

1 18"x17" belt driven Air Compressor.

1 12"x14" belt driven Air Compressor.

1 Bradley Power Hammer, 80-lb.

1 300 H.P. 514 rpm, 60-cycle, 2300-volt, sq. cage motor and starter.

2 75 H.P., 1200 rpm, 440-V. sq. cage Motors and Starters.

200 ft. New 1⅛x6 Chain.

Also dogs, lugs, drums, gears and sprockets for above Chain.

1 12" Band Saw Grinder.

1 Planer Feed Table, New.

1 No. 45 Diamond Hog.

1 7-Ft. Top Band Mill Wheel.

2 9-Ft. Bottom Band Mill Wheels.

2 300 KW Generator, 120-V D.C., New.

1 Baby Simondson Log Turner, 2-Cyl., New.

1 Lot Miscellaneous Large Wire Rope Sheaves.

4 Steam Turbine Driven Pumps, 1000 GPM, 60 Ft. head.

1 Used Lodge & Shipley Lathe, 14" x 5'.

1 Used Lathe, 14" x 6'.

1 Sebastian Lathe, used, 12" x 10'.

WE RE-BAND OR RE-TIRE RESAW AND BANDMILL WHEELS. SATISFACTION GUARANTEED.

"BLUE BABE" RESAWS - BANDMILLS

66 or 72 inch, heavy duty single column, 6 roll resaw. Hydraulic, manual or air operated set works. Opening 17 inches. Saws 10 inch, 15 or 16 gauge. Marten strain. Roller bearings both shafts. This new design eliminates deficiencies of existing machines and is well adapted for ripping and resawing of slabs, etc. Feed speeds up to 500 feet per minute.

54 inch factory type with tilt table for bevel siding, four rolls friction speed control, 6 inch wheel face for 7 inch, 12 or 18 gauge saws. This is a very heavy, rugged machine consisting largely of steel fabrications and castings.

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Used Equipment

BOILERS AND ENGINES

2 300 HP Wicks Vertical Mater tube 150 lbs.
1 Vertical Boiler 66"x132" 75 HP 175 lb. pressure sgl. extended firebox.
1 C&T 13"x16" twin engine 70"x20" pulley.
1 Brownell 13"x16" side crank engine 72"x14" pulley.

PUMPS

1 New Worthington 3x2x3 Duplex.
1 New Worthington 3½x2¼x4 Duplex.
1 New Worthington 4½x2¾x4 Duplex.
1 New Worthington 5¼x3½x5 Duplex.
1 New Worthington 6x4x6 Duplex.
1 Worthington 4½x2¾x4 outside end packed Duplex.
1 Gardner 6x4x6 outside center packed duplex, as is.
1 used Smith Vaile 8x6x8 Duplex.
1 used Dean 14"x7"x10" Duplex boiler feed pump.
1 each 2", 2½", 4", 6", 8" Centrifugal pumps.
1 used Fairbanks Morse 8' Hor. Centrifugal for motor drive.
1 used Gould 5x8" Triplex Belt Drive.

COMPRESSORS

1 Gardner 6x6 Dbl. Cyl. Vertical 80-ft. 440 rev. V-belt drive.
1 Union 6x6½x6 Hor. Twin 114-ft. capacity. (steam driven).

New Worthington Compressors

1 New Worthington M25 142 cu. ft. Compressor, 2-stage air cooled 25 HP motor V-belt drive.
1 New Worthington M40 194 cu. ft. 40 HP V-belt drive.

Complete stock of smaller new Worthington Compressors.

HOISTS

1 4½"x5" Twin reverse throttle.
1 4x4½ twin reversing drum 5'x11".
1 7x12 dbl. cyl. reverse throttle, single drum engine.
1 8¼x8 dbl. cyl. reverse throttle engine.
1 6x6 twin engine reverse throttle.
1 7x10 Flory dbl. cyl. dbl. drum hoist, less boiler.
1 11x13 Willamette dbl. cyl. 3 drum hoist, less boiler.
1 Mundy 7¼x10 dbl. cyl. dbl. drum hoist.
1 8¼x8 Dbl. Cyl. sgl. drum hoist.

HOGS and CHIPPERS

1 Diamond No. 25 Hog babbitt bearings 12"x12" opening.
1 Phoenix No. 2 V type hog, 36" rotor, 12x20 opening.
2 Diamond No. 40 hogs, babbitt bearing, 17¾x19 opening, 48" rotor.
1 New No. 35 V Hog, 15½x16½ opening, anti-friction bearings.
1 used Diamond No. 35 V hog, babbitt bearing, 15½x16½ opening.
1 Rotor for No. 1 Phoenix hog, 43"x23".
1 Diamond No. 45 babbitt bearing hog.
500 ft. used No. 82 chain.
200 ft. ¾"x6" link conveyor chain.
400 ft. 1x6x1½ conveyor chain.
350 ft. 1⅛x6x1½ conveyor chain.
200 ft. 1¼x8x2" log haul chain.
Sprockets and drums for above chain.
1 4x6 cylinder sgl. acting.
1 4x24 cylinder, sgl. acting.
1 4x12 cylinder, dbl. acting.
1 5x18 cylinder, dbl. acting.
1 5x30 cylinder, dbl. acting.
8 6x8 cylinders, dbl. acting.
4 6x12 cylinders, dbl. acting.
1 7x24 cyl. dbl. acting.
1 7½x14 cylinder, dbl. acting.
2 7x16 cylinders, dbl. acting.
3 7x24 cylinders, sgl. acting.
3 8x26 cylinders, dbl. acting.
1 8x20 cylinder, dbl. acting.
1 24x36 cylinder, dbl. acting.
10 4x10 air cylinders for trimmer (Allis).
1 14"x60" cylinder for nigger.
1 12"x24" cylinder, dbl. acting.
1 New 10" BB Motor driven grinder, LH.
1 used Covel No. 66 8" RH Band Saw Grinder.

STEAM FEEDS

1 4½x5 twin feed engine.
1 Speed 5x6 used steam feeds (new).
1 8½x8 Twin.
1 7x8 twin feed, Marion.
1 6x7 twin feed, Marion.
1 8x10 P.I. Works twin feed direct, 24"x12 drum.
1 10"x42' shotgun feed.
1 12"x18' Allis Steam feed, direct 42x27 drum.
1 13"x16" Sumner Steam feed, direct 42x27 drum.

SAWMILL EQUIPMENT

1 Berlin R5 64" Pony band mill, babbitt bearing.
1 New Wheland Carriage 3 44" R&P Blocks.
1 Union 9' roller bearing band mill RH.
1 used No. 4 Power Set Works for screw blocks (Trout).
1 3-block 54" Carriage, screw type set works, trucks and track.
1 used Sumner belt drive, roller bearing shingle machine.
1 Log Cutoff, complete 72" inserted tooth saw.
1 used Wheland 1-man 2-saw trimmer, 16 ft.
1 used Wicks 8"x32" Pony Gang.

EDGERS

1 New Wheland 3"x34" 3-saw roller bearing table edger.
1 New Wheland 4"x44" 4-saw roller bearing table edger.
1 Heaps 6"x30" 3-saw stub lever edger LH.
1 Prescott 6"x44" 4-saw stub lever edger.
1 Used P.I. Works 6x48" stub lever edger, 4 22" saws.
1 Used Willamette 10"x60" 4-saw stub lever edger.
1 Used P.I. Works 4"x48" 4-saw Edger, 50 HP 1800 Motor.
1 McDonough 6"x60" divided rolls—lever shift Edger (4 feed rolls) 4 movable collars, 24" solid tooth saws.

MISCELLANEOUS MACHINES

1 6-ft. Roller bearing Resaw with straight line guide and Merry-go-round or can furnish with 54 or 64" resaw.
1 8x10x5' nigger.
1 Prescott 10" and 10" x 5 ft. nigger.
1 New 24" motor driven drag saw.
1 Used Multnomah 7x44 direct steam drag saw.
1 Hill 6x36 direct steam drag saw.
1 Mershon 7' LH Vertical Resaw LH lever set.
1 Berlin No. 260 circular resaw, 30" saw.
1 Mershon No. 1 Band Rip, 44" wheels, 4" blades, 20 HP motor.
1 Madison No. 207 straight line ripsaw motor drive, 15 HP motor.
1 American No. 2½ sgl. end tenoner copes and CO.
1 Irvington No. 2 underswing CO.
1 Irvington No. 12 swing saw 1 HP motor.
1 48" overhead swing saw.
1 6' overhead swing saw.
1 American 8x24 4-side sq. head Planer.
1 Berlin No. 94 6x15 8-knife planer.
1 Used American No. 22 10" moulder.
New motors, 1 HP to 100 HP 3-60-220/440 V
New motors ⅛ HP to 5 HP 1-60-115/220 V.
1 Used Westinghouse 200 HP 3-60-220 V 1200 slipring.

PLANER KNIFE GRINDERS

1 New No. 101A motor driven sidehead grinder, ½ HP sgl. ph. motor.
1 New No. 102A BB motor driven sidehead grinder and cutterhead grinder.
1 New No. 99A 36" motor driven knife grinder.
1 60" straight wheel knife grinder (26x1½ wheel) used.

FILING ROOM EQUIPMENT

1 16" Bench type brazing clamp.
2 16" hand lamp grinders, as is.
1 New 16" movable roll stretcher, belt drive.
1 New 8" stretcher roll, motor drive.
1 Hanchett No. 1 band saw punch and shear.
1 Used Hanchett 12" LH Band saw grinder.
1 Used Covel No. 100 14" LH band saw grinder.
1 Used Covel No. 90 13" LH Band Saw Grinder.

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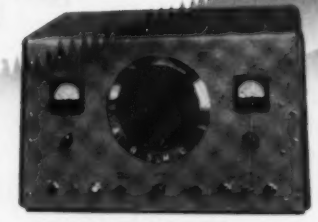

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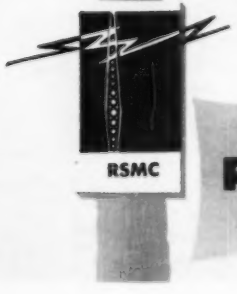

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